

WORK PLAN FOR PHASE VIII/IX/X

SACRAMENTO RIVER TOXIC POLLUTANT CONTROL PROGRAM

March 24, 2006

The following work plan is submitted by the Sacramento Regional County Sanitation District (District) as one component of an application for a Fiscal Year 2004 assistance agreement from the U.S. Environmental Protection Agency (U.S. EPA) under the Clean Water Act (CWA). The funds for this project were authorized as a line item under the Departments of Veterans Affairs (VA) and Housing and Urban Development (HUD), and Independent Agencies Appropriations Bill for 2004. The work plan describes the project background, approach, schedule, and budget. It also contains an integrated work plan, which describes how the Phase X work fits with the work funded under earlier, related assistance agreements, and with the long-range vision for the program.

BACKGROUND

Phase I of the Sacramento River Toxic Pollutant Control Program (SRTPCP) was initiated in October of 1995. Phase II was initiated in October of 1996. Phase III was initiated in October of 1997. Phase IV was initiated in April 1999. Phase V was initiated in November 1999. Phase VI was initiated in April 2001. Phase VII was initiated in December 2001. Phase VIII was initiated in January 2003. Phase IX was initiated in March 2004. This work plan addresses Phase X of the program, which is expected to be initiated in February 2005.

Objectives of the SRTPCP

The long-term objective of the SRTPCP is to develop and implement a program that will bring the Sacramento River and its tributaries into compliance with appropriate water quality standards for toxic pollutants and thereby protect beneficial uses. This objective is to be accomplished through the following steps:

- Performing water quality monitoring to assess conditions throughout the watershed, including the attainment of beneficial uses and water quality standards;
- Developing information used in setting site-specific water quality standards, where appropriate, for the river and its tributaries;
- Identifying and evaluating alternative control options for improving water quality conditions within the watershed; and

- Developing and implementing a technically feasible, cost-effective and locally supported program to protect beneficial uses and achieve water quality standards in the river and its tributaries.

The SRTPCP is intended to be a long-term, multi-year program, and its success will require the active participation of the various parties who have a "stake" in the quality of the River and its tributaries (i.e., the "stakeholders").

For that reason, a second objective of the SRTPCP has been to assist in the formation and maintenance of a viable organization of watershed stakeholders. It is intended that the stakeholder organization address not only the toxic pollutant-related issues in the watershed, but the broader water quality and watershed issues necessary to protect and enhance surface and ground waters throughout the basin. The broader program to be conducted by this stakeholder organization has been named the Sacramento River Watershed Program. In 2002, the SRWP was established as a corporate non-profit entity. The SRTPCP will work in cooperation with the Sacramento River Watershed Program.

Congressional Support for the Program

In 1994, Congress recognized the need to develop a coordinated, technically sound, adequately funded program focused on achievement of toxic pollutant standards within the Sacramento River basin. As a result, the 1995 Appropriation Bill for the Departments of VA, HUD, and Independent Agencies included the following line item:

"\$500,000 for the Sacramento River Toxic Pollutant Control Program."

This was seed money to initiate "Phase I" of the program (denoting money awarded in fiscal year 1995).

Since then, Congress has continued to support the program. The 1996 Appropriation Bill for the Departments of VA, HUD, and Independent Agencies contained \$1,000,000 (for Phase II of the program); the 1997 Appropriation Bill contained \$900,000 (for Phase III of the program); the 1998 Appropriation Bill contained \$2,000,000 (for Phase IV of the program); the 1999 Appropriation Bill contained \$1,700,000 (for Phase V of the program); the 2000 Appropriation Bill contained (\$1,500,000 (for Phase VI of the program), of which \$1,424,900 in federal funding was available for the project; and the 2001 Appropriation Bill contained \$900,000 (for Phase VII of the program), of which \$898,000 in federal funding is available for the project. The District contributed \$47,263 in local matching funds for the Phase VII project elements. The 2002 appropriation contained \$500,000 for Phase VIII work. The District contributed \$26,316 in local matching funds for Phase VIII. The 2003 appropriation contained \$270,000 for Phase IX work. The District contributed \$14,211 in local matching funds for Phase IX. The 2004 appropriation contained \$500,000 of \$497,100 is available for Phase X work. The District will contribute \$26,163 in local matching funds for Phase X.

This work plan and the accompanying grant application are structured to provide "stand-alone" products that will produce significant benefits in the absence of any additional funding.

Interrelationship between the SRTPCP and Other Programs

The SRTPCP is one of a number of programs intended to address water quality issues within the Sacramento River watershed. The relationship between the SRTPCP, the broader Sacramento River Watershed Program, and these other programs are described below.

Sacramento River Watershed Program

The Sacramento River Watershed Program, although initiated with funding provided under the SRTPCP, is now established as a separate corporate entity. The Watershed Program is intended to provide a forum to address a broad array of water quality-related issues within the watershed, including toxic pollutants and water quality management. Additional issues that may be addressed under the broader program include, but are not limited to, education and outreach, habitat, endangered species, flow, drinking water and ground water issues.

Sacramento River Toxic Pollutant Control Program

The SRTPCP is intended to address watershed issues related to toxic pollutants, and is one element of the broader Sacramento River Watershed Program. The SRTPCP has as its long-term objective the development and implementation of a coordinated program to bring the Sacramento River and its tributaries into compliance with appropriate water quality standards for toxic pollutants, and thereby protect beneficial uses. The SRTPCP relies on the stakeholder subcommittees established under the broader Sacramento River Watershed Program for input and guidance. Likewise, the SRTPCP will be conducted in a manner that will facilitate achievement of the broader water quality management goals of the Sacramento River Watershed Program.

Tributary Watershed Management Programs

There are a number of watershed management programs underway on various tributaries to the Sacramento River. Representatives from a number of these programs are participating in the Sacramento River Watershed Program on the Board of Trustees and through various meetings and workshops of the SRWP. A goal of the SRWP is to assist these tributary programs through information sharing and coordinated approaches to monitoring, education and other activities.

Other Ambient Water Quality Monitoring Programs

The water quality monitoring program developed and implemented under the SRTPCP is coordinated with existing major ambient monitoring programs being conducted in the watershed, including programs downstream of the Sacramento Metropolitan Area operating in the Sacramento-San Joaquin Delta and San Francisco Bay. These other programs include, but are not limited to, the National Water Quality Assessment (NAWQA) being conducted in the Sacramento River Basin by the United States Geological Survey (USGS), USGS special studies, the Coordinated Monitoring Program (CMP) being conducted on the Sacramento and American

Rivers in the vicinity of Sacramento by the City and County of Sacramento, the Regional Monitoring Program (RMP) being conducted in San Francisco Bay under the direction of the San Francisco Estuary Institute (SFEI), ongoing programs being conducted by the California Department of Water Resources (DWR), the California Department of Pesticide Regulation (DPR), Interagency Ecological Program (IEP), CALFED monitoring and research being performed by the Regional Water Quality Control Board, Department of Fish and Game and University of California at Davis, Sacramento OP pesticide monitoring in Arcade Creek, local watershed program monitoring programs and others. In the future, it is intended that the SRWP monitoring program will be coordinated with the broader surface water ambient monitoring program (SWAMP) sponsored by the State Water Resources Control Board. Coordination has been accomplished through the active participation of representatives from these programs in the Monitoring and Toxics Subcommittees. The SRTPCP monitoring program has been designed so that it will contribute significantly to the monitoring data necessary to support sound water quality management decisions in the watershed, including data necessary to develop 303(d) lists and total maximum daily loads (TMDLs) for specific constituents of concern.

State Watershed Management Initiative

The Watershed Management Initiative undertaken in California by the State Water Resource Control Board and Regional Water Quality Control Boards is intended to re-direct existing water quality management efforts and resources throughout the State toward a more holistic, watershed management approach. As a result of this initiative, the Central Valley Regional Board, together with other Regional Boards, is implementing a series of watershed management programs. The Sacramento River Watershed Program and the SRTPCP, though initiated independently, are consistent with the basic principles and policies of the State Watershed Management Initiative. Central Valley Regional Board staff integrates their WMI activities with the SRWP.

State Non-point Source Plan

The SWRCB has recently adopted a Non-point Source Plan for California which will guide management of non-point sources over the next 15 years. The management strategies and specific control measures for OP pesticides and mercury will be coordinated with the management measures identified in the State plan to facilitate funding opportunities.

Program Structure

The SRTPCP has been structured to achieve the basic purposes previously discussed, namely:

- Development of a program to address toxic pollutant issues in the watershed, and
- Development and maintenance of a viable stakeholders network and working groups to address these and broader water quality-related issues in the watershed, including the development of water quality management strategies.

The latter objective has been achieved through meetings of a general Stakeholder Committee and continued support for working subcommittees and working groups under the aegis of the

Sacramento River Watershed Program.

Although SRTPCP funds were utilized to initially organize stakeholders and fund essential stakeholder activities (e.g., coordination and facilitation), the resulting stakeholder organization's goals and activities are considerably broader than the limited objectives of the SRTPCP. With the establishment of a broader SRWP, the SRTPCP, as previously stated, is intended to be just one element of that program.

The program structure established to accomplish the goals of both the SRTPCP and the broader Sacramento River Watershed Program are described below.

Sacramento River Toxic Pollutant Control Program

The SRTPCP, in order to achieve program goals and execute all assistance agreement-related activities, is organized as follows:

The Sacramento Regional County Sanitation District, as a signatory to the assistance agreement, has ultimate responsibility for conduct of the SRTPCP. The District fulfills this responsibility through the coordinated efforts of its staff and a number of contractors.

The Central Valley Regional Water Quality Control Board is responsible for assisting in the development and implementation of management strategies in Phase VIII/IX. The Regional Board also performs other functions, such as toxicity monitoring support, technical and administrative support to subcommittees, and administration of the contract(s) for the regional resource network. For the Phase VIII/IX work, the Regional Board will contract directly with EPA Region IX.

The SRTPCP Grants Subcommittee, a subcommittee of the general Stakeholders Committee, has been formed to coordinate all work being funded under the U.S. EPA assistance agreement for the SRTPCP. The subcommittee is responsible for coordinating the various elements of the SRTPCP work plan to ensure that the project objectives are achieved within the time frame and budget established in the assistance agreement. The subcommittee is comprised of the District, Regional Board, U.S. EPA Region IX, various contractors performing work under the grant, and other interested parties from the SRWP.

Sacramento River Watershed Program

The broader Sacramento River Watershed Program (SRWP) is open to all interested members of the community, including private citizens, landowners, local government, local agencies, local watershed groups, trade groups, and state and federal government agencies. The SRWP operates under an informal decision making process, which seeks to achieve consensus where possible. The SRWP is organized as follows:

The Board of Trustees for the SRWP is comprised of 21 members selected through a formal process by the stakeholders. The Board is the decision-making body for the program and its role is defined in its by-laws. The SRWP became a public benefit

corporation in the State of California in July 2002. The Board is developing a strategic plan for its operations, which will include provision of a forum for stakeholder communications, support for watershed activities, including the SRTPCP, and establishment of a long-term funding base.

The Stakeholders Committee is comprised of all interested parties with a stake in the watershed. The committee is responsible for adoption of broad goals for the watershed and, ultimately for decisions with respect to the broader water quality management program. The committee has a number of working subcommittees, which are described below. A collaborative stewardship approach is fostered in the stakeholder committee and subcommittee meetings, and an interest-based approach is utilized to reach consensus on key issues.

The general stakeholders have adopted the following mission statement for the SRWP:

To ensure that current and potential uses of the watershed's resources are sustained, restored and, where possible, enhanced while promoting the long-term social and economic vitality of the region.

The Monitoring Subcommittee is responsible for the development and implementation of the water quality monitoring program to be developed under the SRTPCP. The Monitoring Subcommittee has adopted the following long-term goal:

In coordination with the other subcommittees and the stakeholder committee, develop a cost-efficient and well-coordinated long term monitoring program within the watershed to identify the causes, effects and extent of constituents of concern that affect the beneficial uses of water and to measure progress as control strategies are implemented.

The Toxics Subcommittee is responsible for matters pertaining to the investigation and management of toxic pollutants in the watershed. The subcommittee has adopted the following long-range goal to guide its activities:

In conjunction and coordination with the other subcommittees and the stakeholder committee, the Toxics Subcommittee will:

- *Assess the health of the watershed in relation to toxic constituents of concern;*
- *Identify key problems, opportunities for action, sources of toxic constituents of concern and areas (sub-basins) of concern;*
- *Develop and propose strategies to control toxic constituents of concern; and*
- *Reassess and evaluate, on a periodic basis, the health of the*

watershed, the key problems and sources identified, and the effectiveness of the control strategies.

Consistent with its goal to assess the health of the watershed, the Toxics Subcommittee has sponsored educational workshops to address historic and current issues in the watershed. The Toxics Subcommittee provides input into the strategy development work performed in the working groups for mercury and organophosphate pesticides.

The Biological and Habitat Subcommittee has as its goal the integration of biological monitoring into the overall watershed monitoring program for the purpose of protecting biological and ecological resources within the watershed. The subcommittee provides recommendations on biological monitoring to the Monitoring Subcommittee.

The Public Outreach and Education Subcommittee (POES) is responsible for public education and outreach elements of the SRWP. The subcommittee has developed the following goal:

To facilitate the exchange of information concerning the watershed and to encourage the broadest based participation in the management, protection, and enhancement of the Sacramento River Watershed.

The short-term objectives of the POES are to develop and implement a watershed-wide outreach program and to develop a long-term education strategic plan for the watershed. The subcommittee has taken the lead in organizing general stakeholder meetings and educational workshops for the SRWP.

Phases I, II and III-Objectives and Status

The primary objectives of Phases I, II and III of the SRTPCP were as follows:

1. To compile and analyze existing information on the sources, effects, extent and control of toxic pollutants within the basin;
2. To develop and implement a basin-wide monitoring program that, in conjunction with existing monitoring programs, will identify the sources and extent of toxic pollutants within the basin;
3. To establish stakeholder committees and subcommittees and expand participation by initiating a public outreach program.
4. To develop recommendations for ongoing long-term implementation of the program.
5. To identify priority water quality issues in the watershed and to formulate a strategic framework to address those issues.

6. To coordinate with the SWRCB regarding statewide procedures for the development of site-specific objectives.

An interest-based approach has been used in Phases I, II and III to make decisions on work products and other key issues.

Phase I work was completed in September of 1998. Phase II work was completed in December 1999. Work on Phase III was completed in June 2001.

Phase IV/V/VI/VII and Phase VIII/IX/X Objectives

The objectives of the Phase IV/V/VI/VII and Phase VIII/IX/X program are as follows:

1. To organize and conduct a regional water quality monitoring program, report results and provide data on a publicly accessible database system.
2. To coordinate with other agencies which are monitoring water quality in the Sacramento River watershed and to participate in the development of larger scale monitoring efforts with CALFED, SWRCB and others to coordinate water quality monitoring efforts in the Sacramento-San Joaquin Delta and San Francisco Bay.
3. To formulate water quality management strategies for selected water quality constituents and to perform work to evaluate selected criteria for use by the SRWP as water quality management tools.
4. To support implementation of suitable water quality management strategies for selected constituents of concern, where possible. Broaden stakeholder involvement in the development and implementation of management strategies. Selected constituents of concern include mercury, OP pesticides, drinking water parameters of concern, and unknown toxicity.
5. To expand participation in the SRWP through public outreach and information sharing.
6. To enhance coordination with and support for local watershed management groups.
7. To develop and evaluate institutional options and to implement an institutional framework for the SRWP.

The emphasis of this work is on the development and implementation of water quality management strategies using an interest-based, locally supported approach which emphasizes cost effectiveness and technical feasibility. This work includes the examination of water quality targets and the development of various options or strategies to achieve the targets. These strategies are directly linked to the four fundamental steps which have been established to meet the long-term objectives of the SRTPCP.

As of the date of this work plan, the working groups for mercury and organophosphate pesticides have completed strategic planning activities and are implementing elements of those plans. Stakeholder and public outreach activities are continuing. Five years of ambient water quality monitoring in the Sacramento River watershed has been completed. Four annual water quality monitoring reports have been completed and released to the public.

Phase VIII/IX/X is scheduled to be completed in December 2006.

DETAILED PHASE VIII/IX/X APPROACH

The Phase VIII/IX/X work is planned as a continuation of work previously approved in the Phase IV/V/VI/VII work plan. The following work plan describes the previously approved Phase IV/V/VI/VII work and specifically highlights Phase VIII/IX/X work elements and costs.

The combined Phase IV/V/VI/VII and Phase VIII/IX/X work is designed to achieve the objectives previously described and is divided into four major tasks:

1. SRTPCP Coordination
2. Water Quality Monitoring and Related Activities
3. Water Quality Management
4. Sacramento River Watershed Program

Descriptions of work under each task are presented below. Task descriptions include the work to be performed, the work products to be produced, the parties responsible for the work, and the budget. Budget figures represent the Phase VIII/IX/X task allocations. A summary of the schedule and budget for these tasks are provided immediately following this section.

A later section, titled the Integrated Work Plan, describes how Phase VIII/IX/X tasks fit with work funded under Phases I, II, and III and Phase IV/V/VI/VII.

Task 1. SRTPCP Coordination

Subtask 1a. Coordinate SRTPCP Activities

Description: Participate in SRTPCP Grants, Monitoring and Toxics Subcommittee meetings and activities. Perform essential follow-up work as requested or as needed based on the results of the subcommittee meetings. Respond to stakeholders and public inquiries regarding the SRTPCP. Provide liaison information between these and other subcommittees of the SRWP. Provide meeting recorders at meetings of the SRTPCP Grants, Monitoring and Toxics Subcommittees. Prepare and transmit subcommittee meeting summaries to

subcommittee members.

Activities: Subcommittee meetings with outputs in this subtask.

Outputs: Written summaries of subcommittee meetings. Technical work products supporting subcommittee activities. The time period covered by the Phase IV/V/VI/VII and Phase VIII/IX/X tasks is from March 1999 through February 2006. The Phase X funding for this task extends the schedule from March 2005 through February 2006 except as noted below.

Responsibility: The Central Valley Regional Water Quality Control Board will participate in subcommittee activities, with assistance from the District's staff and consultants, Larry Walker Associates, Harris & Company and others. Regional Board staff shall attend meetings of the SRTPCP Grants, Monitoring and Toxics subcommittees. Regional Board staff shall take minutes at a specified number of SRTPCP Grants meetings per year. Regional Board staff shall coordinate the Toxics meetings and shall coordinate the Toxicity Focus Group, a subgroup of the Toxics subcommittee. Regional Board staff shall participate in the coordination of stakeholder meetings and workshops, respond to public inquiries, and provide information for use in newsletters. Phase VI funding will cover minutes at four Grants Subcommittee meetings, coordination of four Toxics Subcommittee meetings and attendance at twelve monthly meetings of the Grants and Monitoring Subcommittees. Phase VII funding (starting in March 2002) will cover minutes at two Grants Subcommittee meetings, coordination of six Toxics Subcommittee meetings and attendance at six meetings of the Grants and Monitoring Subcommittees. Phase VIII funding (starting in March 2003) will cover minutes at two Grants Subcommittee meetings, and attendance at six meetings of the Grants and six meetings of the Monitoring/Toxics Subcommittees. Phase IX funding (starting in March 2004) will cover minutes at two Grants Subcommittee meetings, and attendance at six meetings of the Grants and six meetings of the Monitoring/Toxics Subcommittees. Phase X funding (starting in March 2005) will cover minutes at two Grants Subcommittee meetings and attendance at six meetings of the Grants and Monitoring/Toxics Subcommittees.

Larry Walker Associates shall attend meetings of the Monitoring, Toxics and SRTPCP Grants subcommittees and shall provide technical and administrative support for those subcommittees. Larry Walker Associates shall participate in the coordination of stakeholder meetings and workshops, respond to public inquiries, and provide information for use in program newsletters. Phase VI funding will cover attendance at twelve monthly meetings of the Grants and Monitoring Subcommittees and attendance at quarterly meetings of the Toxics Subcommittee. The funding for LWA for this task shall extend from March 2001 through December 2001. Phase VII funding (starting in January 2002)

will cover attendance at six meetings of the Grants and Monitoring Subcommittees and six meetings of the Toxics Subcommittee. Phase VIII funding (starting in January 2003 and extending through December 2003) will cover attendance at six meetings of the Grants and six meetings of the Monitoring/Toxics Subcommittees. Phase IX funding (starting in January 2004 and extending through December 2004) will cover attendance at six meetings of the Grants and six meetings of the Monitoring/Toxics Subcommittees. Phase X funding (starting in January 2005 and extending through December 2006) will cover attendance at six Grants and six Monitoring/Toxics Subcommittee meetings.

Harris & Company shall serve as recorder and prepare minutes for the meetings of three subcommittees (Monitoring, Toxics and SRTPCP Grants). Phase VI funding shall cover minutes at twelve Monitoring Subcommittee meetings (four of which will be joint meetings with the Toxics Subcommittee) and four Grants Subcommittee meetings. Phase VII funding (starting in March 2002) shall cover minutes at six Monitoring Subcommittee meetings (each of which shall be joint meetings with the Toxics Subcommittee) and two Grants Subcommittee meetings. Phase VIII funding (starting in March 2003 and extending through February 2004) shall cover minutes at six Monitoring/Toxics Subcommittee meetings and two Grants Subcommittee meetings. Phase IX funding (starting in March 2004 and extending through February 2005) shall cover minutes at six Monitoring/Toxics Subcommittee meetings and two Grants Subcommittee meetings. Phase X funding (starting in March 2005 and extending through December 2006) shall cover minutes at one Monitoring/Toxics Subcommittee meeting and two Grants Subcommittee meetings.

District staff shall attend meetings of the Monitoring, Toxics, POES and SRTPCP Grants subcommittees. District staff shall prepare minutes for two Grants Subcommittee meetings performed during the Phase X period.

The District and its consultants are assisting in this critical task because of the District's interest in, and ultimate responsibility under the U.S. EPA assistance agreement, for the overall success of the program.

Budget: The Phase IX budget includes an \$18,500 allocation, with \$12,000 allocated to the Regional Board, \$4,500 allocated to Larry Walker Associates, and \$2,000 allocated to Harris and Company. The Phase X budget for this task is \$35,763, with \$16,500 allocated to the Regional Board, \$16,363 allocated to Larry Walker Associates and \$2,900 allocated to the Water Education Foundation for work on the summary monitoring report described in Task 2d.

Subtask 1b. Facilitate Monitoring Subcommittee Meetings

- Description: Facilitate Monitoring subcommittee meetings. Assist in the planning of Monitoring Subcommittee meetings.
- Activities: Professionally facilitated meetings. The time period covered by this Phase IV/V/VI/VII and Phase VIII/IX/X task is from March 1999 through December 2005. The outputs for this task are in Task 1a.
- Responsibility: Trained professionals will facilitate the Monitoring Subcommittee meetings.
- Budget: \$12,000 is allocated to a facilitation contractor and \$6,500 is allocated to Harris and Company for notetaking under Phase IX. No Phase X funding is allocated to this task.

Subtask 1c. Evaluate Institutional, Management and Funding Options for the Monitoring Program and SRWP

- Description: Using information derived from Phase II and III pertaining to the assessment of potential institutional, management and funding options, assist the SRWP Subcommittees and other SRWP stakeholders in the selection and adoption of a long term framework for the SRWP to support long term water quality monitoring and other needs of the program. Provide analysis of selected options and provide materials to the group to aid in selection of a future framework.
- Work Products: Targeted outreach meetings shall be held to solicit input on key issues and to identify areas of widespread agreement from the stakeholder group on the future framework for the program. A report shall be prepared which summarizes the key findings of these meetings and which identifies an implementation strategy for the future framework. Phase IV/V funding covers work for the period March 1999 through February 2002.
- Responsibility: Larry Walker Associates was responsible for the Phase IV portion of the work, including conducting outreach meetings with key stakeholders and development of a progress report summarizing key input and describing a strategy for implementing the future framework. Responsibility for follow-up work (after release of the above described report) was assigned to the SRWP Coordinator. Work was based on input and guidance from the SRWP Subcommittees and other SRWP stakeholders.

Work on this task is complete.

- Budget: No Phase VIII/IX/X funding is allocated to this task.

Subtask 1d. Prepare Task Progress Reports

- Description:** Prepare that portion of the semi-annual progress reports to EPA that relates to Task 1.
- Outputs:** Semi-annual progress reports covering Task 1. These Phase VIII/IX/X reports cover the period from March 2003 through February 2006. Phase X funding covers the period from March 2005 through December 2006.
- Responsibility:** Central Valley Regional Water Quality Control Board.
- Budget:** Phase VIII/IX funding covers \$1,500 for preparation of four progress reports by the Regional Board. Phase X funding of \$1,500 is allocated to this task.

Task 2. Water Quality Monitoring and Related Studies

Subtask 2a. Manage Monitoring Program

- Description:** Manage the Year 6 water quality monitoring program to ensure that the work is conducted in accordance with the monitoring plan developed by the Monitoring Subcommittee. Coordinate with Monitoring Subcommittee participants and managers of other monitoring programs (e.g., the U.S.G.S. NAWQA, Sacramento Coordinated Monitoring Program, State Water Resources Control Board SWAMP, San Francisco Bay Regional Monitoring Program, Regional Board, Department of Water Resources, Department of Pesticide Regulation, CALFED and other major monitoring programs) in the evaluation of monitoring performed to date and in the development of revised monitoring goals and strategies for future implementation. Prepare annual revisions of the Quality Assurance Project Plan, and coordinate review and approval of the plan by USEPA staff. Prepare sampling plans and coordinate field sampling and sample analysis activities. Perform QA/QC review. Review data, approve for entry and place data in an Access database as an intermediate step prior to transfer into the Interagency Ecological Program (IEP) data management system and STORET. Provide technical support for data management in the IEP internet accessible, relational database management system.
- Outputs:** Annual revisions to the Quality Assurance Project Plan to address changes to the Monitoring Program. Development of sampling plans which describe the sampling logistics. SRWP program data entered into Access database and thereafter into the IEP database. The time period for the Phase IV/V/VI/VII work extends from June 1999 to June 2003. Phase

VIII funding covers work on the Year 6 monitoring program. No monitoring will be funded under Phase IX or Phase X.

Responsibility: Larry Walker Associates will have primary responsibility for performance for most of the above tasks, based on input and guidance from the Monitoring Subcommittee. DWR staff will be responsible for development of database tools to facilitate transfer of SRWP monitoring data to the IEP database, maintenance of the database and technical support to the SRWP Monitoring Subcommittee regarding data management issues.

Budget: \$20,000 total for Year 6 monitoring support to Larry Walker Associates from Phase VIII funding. \$16,000 in Phase IX funding, with \$10,000 to Larry Walker Associates for program review, evaluation and development within the Monitoring Subcommittee and \$6,000 to the Regional Board. No Phase X funding is allocated to this task.

Subtask 2b. Conduct Field Sampling

Description: Collect field samples in accordance with the SRWP monitoring plan and deliver them to the appropriate laboratory for analysis.

Activities: Field samples for Year 6 will be collected in the period from June 2003 through May 2004. No field samples will be collected under Phase IX or Phase X. The outputs for this task are in Task 2c and Task 2d.

Responsibility: Parties to perform sampling will be selected by District, with input from the Monitoring Subcommittee.

Budget: Included in the budget for Subtask 2c.

Subtask 2c. Perform Laboratory Analyses

Description: Perform laboratory analyses on field samples in accordance with the monitoring plans and associated Quality Assurance Project Plans (QAPPs) and transmit the results of the analyses to the monitoring program managers. Laboratory analyses for Year 6 sampling were approved by the Grants Subcommittee on January 27, 2003, for monitoring work recommended by the Monitoring/Toxics Subcommittee on January 22, 2003.

Activities: Laboratory analyses of field samples collected in Years 2, 3, 4, 5 and 6 under Subtask 2b. As approved by the Grants Subcommittee in January 2003, the period for analysis of Year 6 samples will extend through September 2004. The outputs for this task are in Task 2d.

Responsibility: Parties to perform laboratory analyses will be selected by the Monitoring

Subcommittee with approval of the District. **Laboratory and sampling work for years 1 through 5 is complete.**

Budget:

The Phase VIII funding amount for Year 6 monitoring, as approved by the Grants Subcommittee in January 2003 was \$189,216. No Phase IX or Phase X funding will be allocated for monitoring.

Subtask 2d. Analyze Monitoring Program Results

Description:

Analyze the results of the Year 2, Year 3, Year 4, Year 5 and Year 6 monitoring programs and prepare draft and final reports which present the key results of the SRWP monitoring program and relevant portions of the USGS NAWQA, Sacramento CMP, San Francisco Bay RMP, Department of Water Resources, Department of Pesticides Regulation, CALFED and Regional Board ambient monitoring programs. A draft report will be reviewed by the Monitoring Subcommittee and a three-person external peer review committee established by the District and U.S. EPA. A total of two draft reports and one final report are anticipated for each annual cycle. A response to comments will be prepared for the final report. For the Phase IX effort, prepare a report that identifies, compiles and analyzes metadata and selected numeric data from significant/ major water quality monitoring programs in operation in the Sacramento River watershed in the period from 1998 to 2003, including the SRWP. The purpose of this information is to evaluate the progress made by the SRWP program to meet its existing goals and to identify collaboration/integration opportunities for future SRWP monitoring activities. Use the program descriptions and metadata from the compendium prepared under Task 2f to summarize program goals and objectives, management questions, monitoring tools employed, spatial and temporal coverage, data quality objectives, quality assurance, funding source(s) and anticipated period of operation for the significant/major programs. Use these program features, together with other information, to assist in the formulation of revised goals, objectives and management questions for the SRWP Monitoring Program. Work within the Monitoring Subcommittee framework to develop and document these revised goals, objectives and management questions. Numeric data from selected programs will be assessed to determine whether sufficient data exists to perform (a) trend analysis (b) mass loading analysis, (c) water quality characterization, and (d) water quality objective compliance analysis for various water quality constituents.

Outputs:

Annual reports for Monitoring Years 2, 3, 4, 5 and 6 that describe the monitoring program and presents the key results of the program. A summary of comments and response to comments will accompany each report. Copies of the final reports will be made available in electronic format on the SRWP web-site. The first draft report for each monitoring year will be submitted to the Monitoring Subcommittee for review in December of each year. The final

report for each year shall be completed by June of the following year. The time period covered by Phase IV/V/VI/VII annual monitoring report preparation extends from June 1999 through June 2003 (Monitoring Years 2, 3, 4 and 5). As approved in January 2003, Phase VIII funding will cover work to prepare an annual report for Year 6 monitoring and would extend the time period for this task through July 2006. Phase IX funding paid for the summary report in the Description above.

Responsibility: Larry Walker Associates will have primary responsibility for performance of these tasks, based on input and guidance from the Monitoring Subcommittee.

The monitoring reports for years 1, 2, 3 and 4 are complete.

Budget: Phase VIII funding for report preparation by Larry Walker Associates is \$27,000 following approval of the Year 6 monitoring by the Grants Subcommittee in January 2003. Phase IX funding is \$44,500, with \$30,000 allocated to Larry Walker Associates to lead preparation of the above described report, \$5,000 to Dr. Brock Bernstein to assist in the formulation of revised goals, objectives and management questions involving the Sacramento River watershed as part of work for the CALFED Comprehensive Monitoring, Analysis and Research Program (CMARP III) Water Quality Monitoring Committee, \$5,500 to the Regional Board to review the draft report, and \$4,000 to the Water Education Foundation to review and edit the draft summary report. No Phase X funds are allocated to this task.

Subtask 2e. Analyze System-wide Impacts on the Delta

Description: Participate in efforts by CALFED, SWRCB and others to develop an integrated monitoring program which includes the SRWP monitoring program, USGS, DPR, Sacramento, CALFED and others in the Sacramento River watershed, monitoring by USGS, IEP, SFEI, Deltakeeper, CALFED and others in the Delta, monitoring by USGS and CALFED and others in the San Joaquin, and monitoring by SFEI, USGS, IEP and others in San Francisco Bay. The objective of this integration effort is to have a monitoring program which provides a comprehensive perspective on water quality and other factors which influence the ecosystem and beneficial uses of the overall system. Available information from other programs will be identified and incorporated into the analysis of data from the SRWP monitoring program.

Work Products: Information in the annual monitoring reports which describes and summarizes key information from other programs. Meetings attended and work products generated for the CALFED CMARP Steering Committee and associated workgroups. Work will be performed in the period from March 1999 through February 2002.

Responsibility: Larry Walker Associates will have primary responsibility for performance of these tasks, based on input and guidance from the Monitoring Subcommittee. Regional Board staff shall provide input and guidance to Larry Walker Associates.

Work on this task is complete.

Budget: No Phase VIII/IX/X funding is allocated to perform the activities described under this task.

Subtask 2f. Prepare Compendium of Monitoring Programs in Sacramento River Watershed.

Description: Prepare a compendium which documents the program goals and objectives, management questions, monitoring tools employed, spatial and temporal coverage, data quality objectives, quality assurance, funding source(s) and anticipated period of operation for significant/major water quality monitoring programs in the Sacramento River watershed. Initiate the effort by developing a preliminary list of candidate programs to be included in the compendium. Circulate the list to SRWP Monitoring Subcommittee participants and other interested SRWP stakeholders for augmentation and/or modification. Solicit contact information for managers of all programs on the list. Contact and interview those managers to gather the information to be used in the compendium. Summarize the results in tabular and graphical format. Prepare a draft report for review by the Monitoring Subcommittee. Prepare a response to comments and final report to address input from the Subcommittee.

Outputs: Draft and Final compendium reports. The draft report will be prepared by June 2004. The final report will be finished in February 2005.

Responsibility: Larry Walker Associates

Budget: Phase IX funds totaling \$19,411 are allocated to Larry Walker Associates to complete this task. No Phase X funds are allocated to this task.

Subtask 2g. Conduct Two Water Quality Monitoring Workshops

Description: Two workshops shall be conducted to provide educational information and to solicit input from SRWP stakeholders and other concerned parties regarding future SRWP monitoring activities. The workshops will provide an opportunity for discussion regarding the purpose for monitoring, management questions to be addressed, the capability of available monitoring tools, and the future direction of SRWP monitoring. The workshops will be an integral element of the SWRP

monitoring program evaluation process.

- Activities: Two facilitated workshops with SRWP stakeholders to be completed between March 2004 and February 2005. The outputs for this task are in Task 2a.
- Responsibility: Harris and Company shall lead the effort to organize and conduct two workshops. A facilitator and Larry Walker Associates shall provide support services.
- Budget: Phase IX funds for this task total \$18,000. These funds include \$5,000 for facilitation, \$3,300 to Harris and Company for administrative activities to organize and conduct the workshops, and \$9,700 to Larry Walker Associates to provide the technical content for the workshops. No Phase X funds are allocated to this task.

Subtask 2h. Prepare Task Progress Reports

- Description: Prepare that portion of the semi-annual progress reports to EPA that relates to Task 2.
- Outputs: Semi-annual progress reports covering Task 2. Work period for this task extends from July 2004 through December 2006.
- Responsibility: Larry Walker Associates.
- Budget: Phase VIII/IX/X funding covers \$1,500 for preparation of six progress reports by Larry Walker Associates. No Phase X funding is allocated to this task.

Subtask 2i. Perform Monitoring for Unknown Toxicity

- Description: Identify and perform studies to address unknown water column toxicity in the Sacramento River watershed. Through the Toxics focus group, Regional Board staff will lead this task and prepare a written report to describe the work performed and summarize the results of the studies.
- Outputs: Draft and final reports
- Responsibility: Regional Board shall prepare draft and final reports. The final report will be completed by December 2006.
- Budget: The Phase X funding allocation to this task is \$96,000. The Regional Board is allocated \$5,000 to produce a report of the findings of the

unknown toxicity studies. A total of \$91,000 is allocated for the performance of those studies by a party to be determined by the SRTPCP Grants Subcommittee.

Task 3. Water Quality Management

Subtask 3a. Formulate Water Quality Management Strategies

Description: Water quality management strategies will be developed for water quality parameters of concern identified by the SRWP Toxics Subcommittee. The Toxics Subcommittee has selected the following parameters of concern for strategic plan development under this task: Mercury (bioaccumulation) and Organophosphate pesticides.

The Toxics Subcommittee has also indicated that additional attention should be given to drinking water parameters and unknown toxicity to determine whether strategic plans should be developed for these parameters.

Procedures for strategy development include organization and networking with existing management efforts for each parameter, outreach to interested parties, provision of facilitation services to lead interest-based working groups, identification of problems to be addressed and existing regulatory requirements and constraints, collection and evaluation of pertinent data, development of reasonable strategies by the working groups, and implementation of suitable projects to attain management goals. The purpose behind this overall effort will be to demonstrate the success of an interest-based, stakeholder driven effort to meet water quality management goals in the Sacramento River watershed.

Tasks to be performed in the overall effort to develop and implement strategies for mercury and organophosphate pesticides will be as follows. The Phase IV/V/VI/VII and Phase VIII/IX/X work effort will be performed under this overall framework and will comprise most, but not all, of these tasks.

No additional work on mercury and OP pesticides, or work on water quality management strategies for other water quality parameters of concern were recommended by the SRWP Monitoring/Toxics Subcommittee for Phase VIII activities in January 2003. Phase IX and X activities will include meetings of the mercury, agricultural issues and toxicity focus groups. The agricultural issues focus group is the successor of the OP pesticides focus group.

Outputs: The required reports for the Phase IV/V/VI/VII and Phase VIII/IX/X effort

are outlined below. Reports shall document the background, methodology, results, analysis of results and findings for the associated task. Products shall also include participation in meetings of working groups, liaison reports from the working groups to the SRWP subcommittees, and copies of meeting minutes. The work period for these tasks extends from March 1999 through December 2006.

Responsibility:

Larry Walker Associates shall have primary responsibility for performance of tasks on the mercury work and shall be responsible for submittal of work products in accordance with the stipulated schedule. Regional Board staff shall participate in and contribute to the mercury working group with technical and policy input. Regional Board staff assigned to this task shall provide technical review and comments on draft work products.

Department of Pesticide Regulation (DPR) staff had primary responsibility for performance of for some tasks on the organophosphate pesticides work effort and was responsible for submittal of work products in accordance with the stipulated schedule for Phases IV and V. Central Valley Regional Board staff shall provide technical and policy input to the organophosphate pesticides working group, shall provide technical review and comments on draft work products, and shall work cooperatively with DPR staff in the execution of other assigned tasks.

Larry Walker Associates shall be responsible for participation in regional efforts to assess the drinking water parameters of concern. See Subtask 3a.3.

Budget:

\$237,500 is specifically allocated to mercury tasks for Phase VIII/IX/X, with \$37,500 allocated to Larry Walker Associates for technical support to the DTMC in the period from July 2003 through June 2006, \$25,000 to the Regional Board for assistance to the DTMC and review of technical reports produced by the DTMC in the period from July 2003 through June 2006, and \$30,000 to Harris and Company for meeting facilitation and administration services for the period July 2003 through June 2006. Other Phase X funding totaling \$145,000 is provided for special studies to be performed by the California Department of Health Services (DHS) and the US Geological Survey (USGS).

\$154,005 in Phase VIII/IX/X funding is specifically allocated to pesticides and agricultural issues work, consisting of \$27,500 to the Regional Board, \$9,405 for facilitation, \$4,500 for notetaking and \$82,100 for tasks to be recommended by the OPFG/Ag Issues Focus Group and approved by the Grants Subcommittee. Phase X also includes \$7,500 for completion of the agricultural issues white paper, and \$23,000 for completion of modeling by Waterborne Environmental Inc.

No Phase VIII/IX/X funding is allocated to the drinking water parameters strategic planning task.

Subtask 3a.1 Mercury Management Strategy

Subtask 3a.1.1. SRWP Working Group.

Description: Form and participate in a SRWP working group on mercury. Seek agreement within the group to adopt a methodology for development and implementation of the strategic plan consistent with the tasks outlined below. Assist in efforts to merge and collaborate with other groups/forums working on mercury in the Sacramento River watershed and Bay/Delta. Assist in the assembly of a network of key stakeholders from the private and public sectors representing major interests projected to be involved in the implementation of a comprehensive strategy. Attend meetings and provide facilitation services to the working group. Provide liaison of information from the working group to the SRWP Toxics and Monitoring Subcommittees. Develop, assemble and distribute education and outreach information to work group participants, including information on regulatory requirements and programs which must be considered in the overall management strategy. Develop and maintain a web site for the mercury working group linked to the SRWP web site.

Activities: Facilitated meetings

Outputs: Meeting agendas, meeting notes, liaison materials to the Toxics Subcommittee, outreach materials and mercury web site. The time period for this task is from March 1999 to June 2005.

Responsibility: Larry Walker Associates shall be responsible to lead development and participation in the SRWP working group for mercury and to provide liaison to other SRWP subcommittees. Meridian Group and Harris and Company shall provide professional facilitation services for the working group. Harris & Company shall be responsible for attending meetings of the working group, producing meeting notes, and providing administrative support to the Meridian Group. University of California at Davis provided services to design, implement and maintain a mercury web site linked to the SRWP web page in coordination with the SRWP regional resource network.

Budget:

A total of \$92,500 for Phase VIII/IX/X. The Phase VIII/IX/X total is allocated to Larry Walker Associates (\$37,500), Regional Board (\$25,000) and Harris and Company (\$30,000).

Subtask 3a.1.2 Goals and Targets.

Description: Identify/develop initial goals and targets for water quality management strategies for mercury. As a first step, identify/develop goals and a range of potential target(s). Consider existing regulatory standards, advisory criteria and other pertinent information in the development of potential target(s). Prepare preliminary report documenting evaluation and development of goals and potential target(s) for the strategic plan.

Work product: Preliminary report (submitted 10/99).

Responsibility: Larry Walker Associates shall be responsible for the preparation and submittal of the preliminary report describing goals and potential target(s). Regional Board shall provide technical review and comment on the report.

Work on this task is complete.

Budget: No Phase VIII/IX/X funding is provided for this task.

Subtask 3a.1.3 Evaluate targets.

Description: Identify potential studies to be performed to evaluate or refine potential target(s) identified in the above task. Studies to be considered may include development of site-specific criteria, standards or other target values to address local conditions. Submit information to SRWP working group to select studies for further consideration. Develop work plans for studies to evaluate/refine targets. Submit work plans to SRWP working group for consideration and evaluation. Select studies to be performed under the direction of the working group. Perform studies to evaluate/refine targets. Prepare report summarizing work performed, results, interpretation of results and recommended adjustments or changes to potential target(s) identified in the previous task.

Prepare report documenting evaluation and identification of a finalized range of potential target(s) for use in development of the strategic plan.

Work product: Status report on target studies (submitted 6/00)

Draft target report to working group and peer reviewers by March 2002. Final target report to working group (submitted by 12/02). The report shall include a range of acceptable targets, target evaluation criteria, summary of sensitive uses and linkage to associated targets, description of the bases for selecting or rejecting possible targets, and bibliography of studies used in the target identification and derivation.

This report and other technical reports completed under this Subtask shall be peer reviewed by experts selected by EPA and the District. Candidate peer reviewers include the national experts on the CALFED Mercury Oversight group.

Responsibility: LWA shall be responsible for preparation of a preliminary report describing potential target evaluation studies and preliminary work plans for such studies, as required. Regional Board staff shall provide technical review and comment on the report.

Larry Walker Associates shall be responsible for the preparation and submittal of the final report describing goals and potential target(s). A draft of the report shall be circulated to EPA and other working group participants 45 days prior to the comment deadline. Report shall include a summary of comments received on the draft report and a response to comments.

Work on this task is complete.

Budget: No Phase VIII/IX/X funding is provided for this task.

Subtask 3a.1.4 Conceptual Model(s).

Description: Develop preliminary conceptual model(s) to describe fate, transport, sources, and processes affecting ambient levels of mercury in water, sediment and biota, with input from the mercury working group. Submit preliminary conceptual model(s) to working group for evaluation and refinement. Prepare report describing the content of the conceptual model. Based on input received from the working group, refine and/or augment the

conceptual model report. The revised conceptual model report shall be used by the working group as an organizational tool for use in modeling efforts, data collection, source assessments and public outreach.

Work product: Preliminary report (submitted 9/99). Final report (submitted by March 31, 2002 as a draft for peer review with other elements of the strategic planning documentation and completed as a draft for public review by December 2002).

Responsibility: LWA shall be responsible for preparation of reports describing conceptual model(s) for mercury to be used by the working group.

Work on this task is complete.

Budget: No Phase VIII/IX/X funding is provided for this task.

Subtask 3a.1.5 Identify/quantify Sources.

Description: Identify and quantify important point and non-point sources of total and methyl mercury, with input from the SRWP working group and utilizing results from the CALFED methylation research and non-point source studies. Collect and summarize key source data and prepare report describing important sources, summarizing available data from SRWP monitoring program, identifying data gaps and outlining steps necessary to collect essential information. Develop preliminary load estimates of sub-watersheds, NPDES discharges and other individual sources for which data is available. Assess total and methyl mercury water column data collected by the Department of Water Resources, Department of Fish and Game and USGS in the Sacramento River and tributaries. Validate that DWR data meets the quality assurance standards, or equivalent, as described in the SRWP QAPP. Use this information to update the load estimates for sub-watersheds and to identify tributaries where more intensive source identification monitoring should be directed.

Develop and manage additional studies to collect necessary source data. The approach to be used is a step-wise analysis, using main stem data to characterize total loadings, data at the mouths of tributaries to characterize loadings from sub-watersheds, and tributary data to identify source areas or specific source inputs within sub-watersheds. To the degree possible, determine the mercury mass loadings from individual sources or

source areas, express source loadings as a percentage of the total load for each sub-watershed, and prioritize sources with highest loadings for further analysis. Where possible, using the prioritized list of sources, identify and quantify control measures and their effectiveness for these significant sources using information developed in Subtask 3a.1.13 and 3.a.1.14.

Identify and investigate funding sources for additional total and methyl mercury water column monitoring in tributaries to be used to identify specific sources of mercury in sub-watersheds of the Sacramento River. Develop prioritized summary table of funding sources and steps to be taken to obtain such funding for the Sacramento River watershed. Contact funding parties and take actions to seek such funding, within the budgetary constraints of this task. Alternatively, apply available funding to source investigation monitoring activities.

Work product: The primary goal of this task is to identify, quantify and rank the largest mercury sources or source areas in the Sacramento River watershed. Preliminary report of initial findings regarding sources in the watershed (submitted by 1/00). Draft report (submitted by 1/02) which shall summarize the methods employed to make load determinations, loading results, uncertainty associated with the loading calculations and results of source control evaluations. Final report (submitted 12/02) which incorporates changes resulting from review by the Delta Tributary Mercury Council. Use report review procedure specified in Task 3a.1.3 above.

Responsibility: LWA will prepare report describing and summarizing important source information.

Work on this task is complete.

Budget: No Phase VIII/IX/X funding is allocated to this task.

Subtask 3a.1.6 Select and Use Analytical Models.

Description: Identify and evaluate existing mathematical models which can be used to quantify the linkage between sources, control actions, and targets. Prepare preliminary report which identifies modeling needs, summarizes and describes existing models, and identifies new or modified models which can be developed to meet fundamental analytical needs. Oversee effort to select and utilize models to perform required analyses.

Develop and employ mathematical models to quantify the linkage between alternative source control actions, fate and transport of mercury, biological uptake and the attainment of targets, within the budget constraints of the program. Perform sensitivity analysis of modeling results using differing input assumptions. Identify uncertainty in model parameters and model results. Prepare report which describes models selected for use by the working group, modeling results, and findings derived from the modeling results regarding source control measure effectiveness, attainability of targets and other information to be used in the development of the strategic plan.

Work product: Preliminary report (submitted by 1/00). Draft report of modeling results (submitted by 3/02). Final report (submitted 12/02). Utilize same draft report review procedures as specified for Task 3a.1.3 above.

Responsibility: LWA will prepare reports identifying and evaluating modeling needs and available models.

Work on this task is complete.

Budget: No Phase VIII/IX/X funding is provided for this task.

Subtask 3a.1.7 Peer and Technical Review of reports.

Description: Specific technical reports shall be reviewed by an independent peer review group selected by the District and USEPA. These reports include the Conceptual Model Report, Target Evaluation Report, Sources Report, and Modeling Report. The Regional Board will also provide technical review of these reports. The date for submittal of these reports for peer review and technical review was 7/22/02.

Work Product: Response to peer review comments and Regional Board comments. (09/02)

Responsibility: LWA will prepare the response to comments. Regional Board will provide technical review of the work product.

Work on this task is complete.

Budget: No Phase VIII/IX/X funding is provided for

this task.

Subtask 3a.1.8 Develop Strategic Plan.

Description: Identify and assess alternative strategies for reaching the range of targets identified in Subtask 3a.1.3, with input from the SRWP working group. Strategies shall consist of various source reduction scenarios, drawing from results from the CALFED program and input from the working group. Evaluate costs, benefits, and effectiveness of alternative mercury control strategies in achieving identified targets. Prepare report describing alternative strategies and summarizing the evaluation of these alternatives. Finalize selection of attainable targets, if possible. Submit report to SRWP working group and assist the group in the selection of an overall strategy to achieve identified targets. Overall strategy shall include consideration and recommendations regarding allocations of responsibilities and funding requirements for implementation of the strategic plan. Prepare final report documenting the rationale and content of the recommended strategic plan.

Work product: Final working group report (12/02). Report shall be distributed to peer reviewers selected by the District and USEPA. Final report shall be peer reviewed with Phase VII funds. **The Final report was completed in December 2002.**

Responsibility: LWA shall be responsible for preparation of a preliminary report describing alternative strategies and the evaluation of the costs, benefits, and effectiveness of those alternatives. Regional Board shall provide technical and policy review and comment on the report.

Work on this task is complete.

Budget: No Phase VIII/IX/X funding is provided for this task.

Subtask 3a.1.9 Implement strategic plan.

Description: Identify and prioritize implementation projects/actions which are consistent with the strategic plan. Opportunities for early implementation projects shall be identified and evaluated. Prepare annual status reports documenting progress in implementation of the strategic plan, actions completed, dates of actions and proposed changes to the implementation plan based on

new information. Annual status reports shall commence upon adoption of the strategic plan by the working group.

Work product: None for Phase IV/V/VI/VII or Phase VIII/IX/X.

Responsibility: None for Phase IV/V/VI/VII or Phase VIII/IX/X.

Subtask 3a.1.10 Effectiveness Evaluation.

Description: Monitor effectiveness of strategic plan implementation activities in achieving the identified goals and targets. Prepare report which describes the monitoring methods, monitoring results and effectiveness evaluation.

Work product: None for Phase IV/V/VI/VII or Phase VIII/IX/X.

Responsibility: None for Phase IV/V/VI/VII or Phase VIII/IX/X.

Subtask 3a.1.11 Revise Plan.

Description: Performance of this task is contingent on the finding that the original plan will not achieve the goals and target(s) of the working group. Identify alternative revisions to the strategic plan as necessary to achieve goals and targets, with input from the SRWP working group. Evaluate costs, benefits, and effectiveness of alternative revisions. Prepare preliminary report describing the alternatives and summarizing the evaluation of the alternatives. Submit the preliminary report to the working group for evaluation. Assist the working group in the selection of a revised strategy, as necessary. Prepare final report to document the rationale and content of the revised strategic plan.

Work product: None for Phase IV/V/VI/VII or Phase VIII/IX/X.

Responsibility: None for Phase IV/V/VI/VII or Phase VIII/IX/X.

Subtask 3a.1.12. Fish Consumption Survey

Description: Gather available information and develop a detailed work plan for the performance of a fish consumption survey within a portion of the lower Sacramento River watershed (e.g. below major reservoirs, within lower Sacramento River, Cache Creek, Feather River, American River, Delta waters). To the extent possible, methodology for the survey shall be consistent with the survey approach used in San Francisco Bay area by the Department of Health Services and SFEI and consistent with the

procedures which have been employed by OEHHA and USEPA in other locations. Consultation shall be made with the principal investigators for the San Francisco Bay study and Regional Board staff to obtain recommendations for a Sacramento River watershed study. Available information to be gathered shall include fish tissue data, data on intensity of use of fishing areas (e.g. from Marine Recreational Fisheries Statistics Survey, Department of Fish and Game creel surveys, etc). The work plan should describe a study which would provide statistically supportable results, cover a representative number of sites, and cover sites which are useful to the development of the DTMC strategic plan. The work plan should describe methods of data collection, basis for site selection, QA/QC procedures and methods to be used in statistical analysis and data interpretation, an estimated budget and a schedule for performance of the survey. The work plan shall support the overall purpose of the survey to quantify consumption rates for locally caught fish and to characterize the species and sizes of fish consumed within the selected study area.

After completion of a preliminary work plan, a decision will be reached regarding (a) continued effort to develop a more specific work plan, (b) a field survey of fishing locations, or (c) commencement of the survey. At that point, the allocation of costs to specific tasks and the schedule for continued work will be developed.

Work Product: Work plan for fish consumption survey completed by May 2001. Additional work elements to implement survey.

Responsibility: California Department of Health Services and Impact Assessment Inc. Larry Walker Associates shall coordinate with selected contractor to provide linkage to the target evaluation task and assist in the development of the scope of work.

Work on this task is complete.

Budget: No Phase VIII/IX/X funding is allocated to this task.

Subtask 3a.1.13 GIS Database

Description: Obtain and consolidate the following existing GIS data layers and information into a GIS data base to be used in mercury source identification and strategic planning activities: SRWP and other

important mercury water quality and fish tissue monitoring sites, active flow gaging stations, mercury mine sites, gold mine sites, geothermal sites, wetland areas, land use information, NPDES discharge points, and dam sites. Existing GIS layers prepared by USGS, Department of Conservation, Department of Water Resources and others shall be used to the extent possible. The GIS-based tool will be used for mapping, data display, conceptual and analytical modeling, and database purposes. The GIS database will be designed with the intention of linking to the DTMC mercury website to make the GIS information internet accessible. It is also intended that the format used for the GIS database will be compatible with the standard GIS format used by other parties, including the Regional Board and USGS.

Work Product: GIS data layers representing the above described available information for the Sacramento River watershed (July 2001). Ongoing work to augment and refine GIS database.

Responsibility: Larry Walker Associates

Work on this task is complete.

Budget: No Phase VIII/IX/X funding is allocated to this task.

Subtask 3a.1.14 Control Measure Effectiveness Evaluation

Description: Perform a literature review and analyze available information pertaining to alternative control measures and the effectiveness of such measures for selected mercury source types. The source types shall be selected as a result of assessment of results and prioritization of sources under Subtask 3a.1.5. These sites may include mercury mine sites, gold mine sites, geothermal sites, NPDES facilities, sediment behind reservoirs, in-stream sediments, erodable sediments, etc. These sites also may include other specific source types identified in the CALFED research in the Cache Creek watershed. The purpose of this task is to develop source-specific information which will be useful, at an individual source, sub-watershed and watershed scale, to estimate localized and regional mercury reductions which may be achieved through control of the subject sources. Work will be coordinated with source identification and source location work described in Subtasks 3a.1.5 and 3a.1.13. Monitoring information will be used to identify sources or source areas. Land use, soil information, source locations and other information from the GIS system will be used in Subtask 3a.1.5 to complete the loading analysis and to assess the sub-regional and regional importance of individual

sources.

Work Product: Technical report summarizing the results of the control measure effectiveness evaluation for selected source types and source areas (December 2001).

Responsibility: Larry Walker Associates.

Work on this task is complete.

Budget: No Phase VIII/IX/X funding is allocated to this task

Subtask 3a.1.15 Phase VII Mercury Tasks

Description: Develop and implement task activities from list pre-established by the DTMC at its meeting of April 10, 2001.

Work Product: All work completed by October 2004.

Responsibility: California Department of Health Services and Impact Assessment Inc. .

Work on this task is complete.

Budget: No Phase VIII/IX/X funding is allocated to this task.

Subtask 3a.1.16. Community Outreach, Education and Training.

Description: Goal of the work is to help to characterize and reduce exposure to mercury in human populations that consume fish in the Delta watershed. The work is part of the Delta Watershed Fish Project, a collaborative effort of federal, state and local agencies, and community-based organizations. A Local Stakeholder Advisory Group and a Technical Advisory Group have been formed. This work targets women of child-bearing age, and pregnant and breastfeeding women in the Sacramento River watershed.

Work tasks include convening and facilitating Technical Advisory Group (TAG) meetings; developing, translating, and distributing outreach, education and training materials; implementing evaluation of a poster and resource guide; and providing training on mercury contamination in fish.

Work products: Agendas, meeting notes and handouts from TAG meetings.

Translated postcard and handout, and description of distribution

activities.

Description of evaluation plan and summary of evaluation results.

Description of training activities and an itemized listing of training materials purchased.

The time period for this Phase VII task is from August 2004 to July 2005.

Responsibility: California Department of Health Services, Environmental Health Investigations Branch (EHIB). The funds will be administered by Impact Assessment Inc., the fiscal agent for the EHIB.

Work on this task is complete.

Budget: \$36,614 of unused funds from Phases V and VI in Subtask 3a.1.1.

Subtask 3a.1.17 Phase X Mercury Risk Outreach Activities

Description: Identify and characterize populations that consume fish in the Delta watershed and conduct outreach and education activities to reduce the exposure of these populations to mercury in fish. Collaborate with community-based organizations that serve high fish consuming populations. Perform fish consumption survey.

Outputs: Meeting summaries, final report that summarizes survey data and recommendations for activities to reduce mercury exposures. Work will be completed by December 2006.

Responsibility: California Department of Health Services

Budget: Phase X budget allocation to this task is \$95,000.

Subtask 3a.1.18 Water Quality Monitoring in Association with Methylation studies in Sacramento River watershed

Description: Monitor water quality at wetland sites where ongoing studies of mercury methylation potential and bioavailability in sediments will be performed. Water quality monitoring will provide an indication of the extent to which mercury transformation processes in the wetlands may affect downstream water quality with regard to methyl mercury. Sites will be selected after discussion with the DTMC. Water quality sampling will include inflow and outflow sites. Water quality analyses will include filtered and unfiltered total mercury and methyl mercury, total suspended solids, major

cations, major anions, trace metals, nutrients, and dissolved and particulate carbon. Results of the sampling will be integrated with the results of a sediment study performed by others at USGS.

Outputs: Draft and final report. Final report shall be completed by December 2006.

Responsibility:USGS

Budget: Phase X budget for this special study is \$50,000.

Subtask 3a.2 Organophosphate Pesticides Management Strategy

The dates for work products below are approximate. Specific terms for products and their due dates will be provided in the detailed work plan described in Task 3a.2.1 below. The Department of Pesticide Regulation (DPR) and the Central Valley Regional Water Quality Control Board (RWQCB) have joint responsibility of the work products in Phases IV and V, as described below, with RWQCB responsible for technical review and comment on work products; DPR has responsibility for assuring that due dates for all Phase IV and V work products are met. Contractors for Phase VI, VII, VIII, IX and X work are as specified or will be determined by the District.

Subtask 3a.2.1 Develop Detailed Scope of Work.

Description: Develop a detailed scope of work that builds upon the framework established in this work plan.

Work product: Scope of Work (6/99)

Responsibility: DPR and RWQCB will develop scope jointly. The scope will be submitted to the SRWP Toxics Subcommittee for review prior to finalization.

Work on this task has been completed.

Budget: No Phase VIII/IX/X funds have been allocated to this task.

Subtask 3a.2.2. Pesticide Focus Group.

Description: Form and participate in focus group to develop a strategy to protect the main stem Sacramento and Feather Rivers from adverse effects of diazinon applied to dormant orchards and other sources. A specific strategy for chlorpyrifos will probably be included, resources permitting. Collaborate with other stakeholder groups, including the SRWP Toxics Subcommittee and others.

Work product: Form group (6/99), hold meetings, meeting agendas, meeting notes, liaison to Toxics Subcommittee.

Responsibility: DPR will be the lead with assistance from the RWQCB; input will be received from the District and the Toxics Subcommittee. District will contract with a facilitator and recorder acceptable to the focus group. The time period for this Phase IV/V task is from March 1999 to February 2001.

Work on this task has been completed.

Budget: No Phase VIII/IX/X funding is included for this task .

Subtask 3a.2.3. Goals and Targets.

Description: Identify/develop a list of goals and targets for diazinon and chlorpyrifos in the Sacramento and Feather River watersheds. Consider existing regulatory standards, advisory criteria and other pertinent information (e.g., Department of Fish and Game's water quality criteria, pesticide registrants' ecological risk assessments, etc.). Prepare a preliminary report documenting the evaluation process and rationale for goals and targets. The report will be prepared by DPR and brought before the focus group for review and comment. The report will also be peer reviewed by experts selected by the focus group, the District, and EPA in Subtask 3a.2.10.

Work product: Draft report from DPR to SRWP (8/1/99)
Draft Final report from DPR. (12/15/00)

Responsibility: DPR will be the lead with assistance from the RWQCB; input will be received from the District and other focus group members.

Work on this task has been completed.

Budget: No Phase VIII/IX/X funding is provided for this task.,

Subtask 3a.2.4. Prepare Monitoring Plan.

Description: Prepare plan for monitoring within Sacramento and Feather River watersheds to characterize contributions of key tributaries to pesticide loading. Identify potential funding sources for implementation of the monitoring plan. This task must be completed in time to allow the monitoring plan to be implemented by December 1999.

Work product: Draft Monitoring Plan from DPR to SRWP (8/99)
Final Monitoring Plan from DPR with response to comments
(01/00)

Responsibility: DPR will be the lead with assistance from the RWQCB; input will be received from the District and other pesticide focus group members.

Work on this task has been completed.

Budget: No Phase VIII/IX/X funding is provided for this task.

Subtask 3a.2.5. Implement Monitoring Program.

Description: Implement the monitoring program designed under task 3a.2.4 if sufficient resources are obtained. If sufficient resources are not available, implement a reduced monitoring program tailored to available resources. Monitoring will be initiated in time to include the 1999-2000 pesticide application season.

Work product: Conduct monitoring, prepare OP pesticide monitoring data report summarizing historic and monitored surface water data for the Sacramento River and Feather River. Report shall document OP pesticide levels and estimated diazinon loadings from sub-watersheds for the two rivers. The report shall be peer reviewed by experts selected by the focus group, the District, and EPA.

Responsibility: DPR is responsible for preparing the draft and final monitoring reports. RWQCB will assist DPR in implementing the monitoring program and preparing the monitoring report. Draft report shall be completed by 01/01. Final report with response to comments and peer review shall be completed by 6/30/01.

Work on this task has been completed.

Budget: No Phase VIII/IX/X funding is provided for this task.

Subtask 3a.2.6 Identify and Evaluate OP Pesticide Control Measures

Description: Based on information available, describe viable OP pesticide management measures and management strategies that can reduce levels of OP pesticides in the Sacramento and Feather Rivers. Measures may include application methods, timing of application, alternative pest management measures, site improvements to reduce off-site movement, hydraulic manipulations and other controls.

Work Product: Draft report summarizing identified management measures and strategies (12/00). Final report including peer review and response to comments (6/30/01). Plan to promote additional studies by 04/00.

Responsibility: DPR is responsible for preparing the summary of OP pesticide management measures and a plan, if determined necessary, for promoting additional studies on OP pesticide management measures by 04/00. RWQCB shall assist DPR in preparing these documents, with review by the focus group.

Work on this task has been completed.

Budget: No Phase VIII/IX/X funding is provided for this task

Subtask 3a.2.7. Midcourse evaluation.

Description: Evaluate status of project and recommend work plan amendments in preparation of Phase V funding. Provide briefing of findings to OP pesticide focus group.

Work product: Report with recommendations to SRWP (01/00). Article submitted to “Waterways” newsletter (03/00).

Responsibility: DPR will lead with consultation with the RWQCB and the focus group.

Work on this task has been completed.

Budget: No Phase VIII/IX/X funding is provided for this task.

Subtask 3a.2.8 Develop Visual Tools.

Description: Develop electronic GIS information to assist in the understanding and communication of pesticide management plan elements. Layers that may be included are the base layer of rivers and watersheds, diazinon use /source data, monitoring information and hydrologic information.

Work Product: Sacramento and Feather River base layer (11/99). Preliminary OP use/source data (01/00). Preliminary monitoring and hydrologic layers (12/00).

Responsibility: DPR will lead with assistance from RWQCB. Input will be received from focus group members.

Work on this task has been completed.

Budget: No Phase VIII/IX/X funding is provided for this task.,

Subtask 3a.2.9. Identify/Quantify Sources.

Description: Identify and quantify important regional sources of diazinon, and perhaps chlorpyrifos, to the Sacramento and Feather rivers using existing data. Based on monitoring information from these watersheds and others (i.e., San Joaquin River watershed), evaluate factors that are important in determining the concentrations in the rivers. Using appropriate models, determine how concentrations vary in the Sacramento and Feather Rivers depending on load and flow scenarios. To the extent possible, describe and evaluate effects management practices may have on load contributions to the Sacramento and Feather River watersheds. Compare concentrations and loads to targets and determine reductions necessary for target compliance. In accordance with US EPA policy for peer review of federally-funded projects, the draft report will be provided to experts selected by the USEPA and the District for comment and review.

Work product: Draft report to SRWP (12/00)

Final report with response to comments and peer review (6/30/02)

Responsibility: Waterborne Environmental will provide modeling services with assistance from the RWQCB; input will be received from the District and other focus group members.

Work on this task has been completed.

Budget: No Phase VIII/IX/X funding is provided for this task.

Subtask 3a.2.10. Evaluate Targets.

Description: Evaluate various targets and goals identified in Subtask 3a.2.3. This evaluation will focus on providing information that explains the basis for individual targets, including the rationale for their use, including, but not limited to, the requirements of the Clean Water Act. If appropriate, studies shall be identified which would refine specific targets. DPR will prepare a report summarizing work performed, including recommendations regarding targets and a comparison of load study results with the targets evaluated.. DPR will present the draft report to the focus group for review and comment. In accordance with USEPA policy for federally-funded

projects, the draft report will be provided to experts selected by USEPA and the District for comment and review.

Work product: Draft report to SRWP (12/00)

Final report with response to comments and peer review (6/30/01)

Responsibility: DPR will be the lead with assistance from the RWQCB; input will be received from the District and other pesticide focus group members.

Work on this task has been completed.

Budget: No Phase VIII/IX/X funding is provided for this task.

Subtask 3a.2.11. Develop OP Pesticide Management Plan.

Description: Based on existing data, identify and assess management practices and strategies that can be implemented to achieve the range of targets, with input from the focus group. Strategies shall be evaluated for their ability to meet water quality targets in various load/flow scenarios. Evaluate costs, benefits, and pest management considerations of alternative strategies. At a minimum, load reduction goals and management measures to achieve compliance with the Fish and Game criteria must be fully evaluated. Describe methods for promoting/assuring compliance with strategies. Prepare plan for monitoring program that will determine compliance with targets in the Sacramento and Feather River watersheds. Identify funding sources for compliance monitoring. Identify funding sources for compliance monitoring and additional studies on control measures.

DPR, with assistance from the RWQCB, will prepare preliminary report describing alternative strategies and summarizing the evaluation of these alternatives. Data gaps, and prospective sources of funding to fill these gaps, will be identified. The report will be brought before the focus group for review and comment. The report should also recommend, from the range of targets previously identified, considering all the factors, which target the watershed program recommends for the Feather River and Sacramento River. The overall strategy shall include consideration and recommendations regarding allocations of responsibilities and funding requirements for implementation of the plan. In accordance with USEPA policy for federally-funded projects, the draft report will be provided to experts selected by USEPA and the District for comment and review.

Work product: Semi-annual progress reports to focus group
Draft report to SRWP (12/1/00).
Draft report to peer reviewers selected by US EPA and District (3/30/01).
Final report with response to comments and peer review (8/01/01).

Responsibility: The focus group will be the lead with assistance from the RWQCB; input will be received from the District and other SRWP members.

Work on this task has been completed.

Budget: No Phase VIII/IX/X funding is provided for this task

Subtask 3a.2.12. Pesticide Focus Group Phase VI Coordination.

Description: Participate in focus group to implement a strategy to protect the main stem Sacramento and Feather Rivers from adverse effects of diazinon applied to dormant orchards and other agricultural lands. Collaborate with other groups, including the SRWP Toxics Subcommittee.

Work product: Hold meetings, meeting agendas, meeting notes, liaison to Toxics Subcommittee. The time period for this Phase VI task is from March 2001 to February 2002.

Responsibility: To be determined; input will be received from the District and the Toxics Subcommittee. District will contract with a facilitator and recorder acceptable to the focus group.

Work on this task has been completed.

Budget: No Phase VIII/IX/X funding is allocated to this task.

Subtask 3a.2.13. Contribution of Funds for the proposed CWA § 319(h) project: Implementation of Best Management Practices to Mitigate OP Pesticides Runoff.

Description: The proposed CWA § 319(h) project, Implementation of Best Management Practices to Mitigate OP Pesticides Runoff, was designed to be a vehicle to initiate implementation of the OP Pesticide Management Plan (product of Subtask 3a.2.11). The project will be coordinated through the OP Pesticide Focus Group. At the May 2000 OP Pesticide Focus Group meeting, the group committed \$20,000 of its budget to the project for monitoring to evaluate management practices.

Products associated with the monitoring for the CWA § 319(h) project

include preparation of OP pesticide monitoring plans for each year of the project (3 years total), conducting the monitoring, preparation of status reports (quarterly), and a report summarizing the monitoring data.

In October 2001, the group agreed to use the \$20,000 to augment the work of the U.C. Davis Pesticide/Water Quality Team in demonstrating the efficacy of alternative practices for reducing OP runoff. At least one of the U.C. demonstration studies for the winter of 2001-2002 will be conducted within the 319 Project area.

Work product: In-field runoff sampling units will be constructed, placed in an orchard in the 319 Project area, and operated during the winter of 2001-2002 to demonstrate the efficacy of certain orchard site management practices in reducing off-site movement of pesticides. As the 319 project will be coordinated through the OP Pesticide Focus Group, monitoring status reports will be given regularly to the group; and a presentation summarizing Year 1 data will be given to the group (10/02).

Responsibility: Statewide Integrated Pest Management Project, University of California at Davis (Jim Lyons, Acting Director).

Work on this task has been completed.

Budget: No Phase VIII/IX/X funding will be allocated to this task.

Subtask 3a.2.14. UC Cooperative Extension Farm Advisor Assistant for Educational Outreach to the East Indian Grower Community.

Description: Members of the OP Pesticide Focus Group (UC IPM and UCCE farm advisors, Agricultural Commissioner Office representatives from counties in the watershed, and agricultural consultants) have identified some non-traditional stakeholder groups within the watershed that conventional outreach efforts have not reached. Specialized outreach will be needed for these groups. Outreach to the East Indian grower community will be a pilot program for these efforts.

Fred Thomas of CERUS Consulting will be conducting preliminary outreach to this community, funded with early implementation funds from Phase IV/V of the SRWP program. He will meet with community members to identify the elements needed for effective outreach to their community. One goal is to identify an individual from the community for the Farm Advisor Assistant position.

This task will be the second phase of this effort, and will be undertaken by the UC Cooperative Extension program. It entails employing a member of

the East Indian grower community to assist the educational and outreach activities of the University of California, Area Integrated Pest Management Advisor for Sutter-Yuba Counties, Butte County, Glenn County, Yolo County, and Tehama County (Carolyn Pickel), and through her, the Cooperative Extension Farm Advisors in the area. Emphasis of this position would be on extending information relative to integrated pest management and water quality issues pertinent to the agricultural producer portion of the East Indian community residing within the Sacramento/Feather River watershed.

SRWP funds will be used to fund a portion of the position. Other identified funding sources are DPR PMA funds, UC IPM funds and the proposed CWA § 319(h) project (Implementing Best Management Practices to Mitigate OP Pesticides Runoff). This position will involve a direct link with the proposed CWA § 319(h) project, including field scouting at the demonstration orchards and coordination of outreach associated with the project to the East Indian grower community. CWA § 319(h) project funds will be used for these efforts from 2/02 through harvest (9/02). This position will also link with multiple ongoing efforts, as well as proposed future efforts, aimed at raising the awareness of major issues involving the use of pesticides and their impacts on water quality. These efforts include those of the Sacramento River Watershed Program, the UC CALFED Pesticide/Water Quality Project, the UC Statewide IPM Project, and various Pest Management Alliance projects.

Work product: Assist with translations, either in language or terminology, for farm calls and walk-in office calls via the UC Cooperative Extension office for Yuba-Sutter Counties; facilitate educational meetings, workshops, and field days that target members of the East Indian grower community; assist with cooperative grower research projects by establishing study plots, collecting data, and entering data for analysis; work with multi-stakeholder interest groups and agencies to facilitate educational and demonstration project efforts; translate into Punjabi, publications, newsletters, and other pertinent information; work with the local East Indian grower community media (radio, TV and newspapers) to identify and develop educational outreach opportunities.

The time period for this task will be from 11/01 to 10/02 (for the SRWP funded component). Work products for the SRWP funded component include quarterly status report presentations to the OP Pesticide Focus Group summarizing the work conducted and progress made, and participation with the OP Pesticide Focus Group Agricultural Practices Workgroup meetings (attend 4 meetings).

Responsibility: University of California, Area Integrated Pest Management Project; UC IPM Farm Advisor Carolyn Pickel will supervise the farm advisor

assistant.

Work on this task has been completed.

Budget: No Phase VIII/IX/X funding is allocated to this task.

Subtask 3a.2.15. Implementation of OP Pesticide Management Plan (Subtask 3a.2.11) - Implementation Coordination.

Description: Coordinate with entities such as commodity groups, Agricultural Commissioners, the NRCS and local Resource Conservation Districts, UC IPM and UCCE Farm advisors, UC SAREP, California Agricultural Production Consultants Association (CAPCA), Association of Applied Insect Ecologists (AAIE), the California Farm Bureau, the Agricultural Council of California, California Association of Family Farmers (CAFF), the Nature Conservancy, academic institutions, DPR, CDFG, and the CVRWQCB to implement management practices identified in Subtask 3a.2.6 and the Management Plan identified in Subtask 3a.2.11. This will involve information exchange and coordination for ongoing studies and demonstration projects being conducted by various agricultural groups. It may also include efforts to obtain additional state funds to further implementation of the Management Plan within the watershed and/or state funds to fill identified data gaps (including, but not limited to, research related management practices and effects on biological communities related to mitigation efforts). Cost sharing programs with growers and universities will also be encouraged. Potential funding sources include, but are not limited to Proposition 13, CALFED, DPR, SWRCB, CVRWQCB, and UC SAREP.

Work product: Coordination with the groups listed above; preparation of grant proposals to fund demonstration projects, monitoring (can include chemical, toxicity, and bioassessment and physical habitat) and research related to data gaps in management practices and effects on biological communities related to mitigation efforts; coordination with the OP Pesticide Focus Group on proposed projects for grant proposals; quarterly status reports to the OP Pesticide Focus Group. The time period for this task will be from 11/01 to 5/02.

Responsibility: Parry Klassen

Work on this task has been completed.

Budget: No Phase VIII/IX/X funding is allocated to this task.

Subtask 3a.2.16. Implementation of OP Pesticide Management Plan (Subtask 3a.2.11) - Grower Liaison(s) and Site Identification for Implementation.

Description: Work directly with growers in the watershed and assist with site identification for implementation of the management practices identified in Subtask 3a.2.6 (including application methods, timing of application, alternative pest management practices and site improvements to reduce off-site movement, hydraulic manipulations and other controls) and the Management Plan identified in Subtask 3a.2.11. Focus will be on contact with individual growers or small groups of growers to provide information on practices and the Management Plan, and technical assistance for implementation of management. This work will facilitate the establishment of demonstration sites for the proposed CWA § 319(h) project (Implementing Best Management Practices to Mitigate OP Pesticides Runoff). Grower recruitment can begin once an appropriate drainage basin has been identified by the OP Pesticide Focus Group CWA § 319(h) project team. (The evaluation is currently being conducted, and is based, in part, on information from Subtask 3a.2.5).

A portion of this effort may be an expansion, or next phase, of the outreach effort to be conducted in the fall and winter 00/01 by Fred Thomas of CERUS Consulting, funded with SRWP early implementation funds. Part of this outreach focuses on non-traditional stakeholder groups in the watershed. A goal of subtask 3a.2.16 will be to recruit, to the extent possible, growers from non-traditional groups in the selected drainage basin, along with growers from traditional groups, to participate in the proposed CWA § 319(h) project.

Work product: Meetings with growers; providing technical assistance for implementation of practices; grower recruitment; coordination with the project team for the proposed CWA § 319(h) project; quarterly status reports to the OP Pesticide Focus Group. The time period for this task will be from 11/01 to 7/02.

Responsibility: Gary Obenauf, Agricultural Research Consulting

Work on this task has been completed.

Budget: No Phase VIII/IX/X funding will be allocated to this task.

Subtask 3a.2.17. Evaluation of OP Pesticide Management Practices.

Description: Work will build upon tasks outlined in Subtask 3a.2.6. Evaluation of practices will continue to be refined. Areas of evaluation will include crop specific considerations, costs, efficacy in pest control, and efficiency in

reducing OP pesticide loading.

Work product: Continued coordination of the OP Pesticide Focus Group working group on practices (the Agricultural Practices Workgroup); includes meeting coordination, agendas, meeting notes, solicitation of additional participants, liaison reports to the OP Pesticide Focus group; coordination of peer review of the management practices report (product from Subtask 3a.2.6) and preparation of the responsiveness summary; and compiling updated, new or further information from participants, studies and demonstration projects to incorporate into future iterations of the management practices report. Finalized management practices report, including peer review responsiveness summary: 7/1/01. Report to OP Pesticide Focus Group on newly gathered information on management practices: 3/02.

Responsibility: CVRWQCB

Work on this task has been completed.

Budget: No Phase VIII/IX/X funding will be allocated to this task.

Subtask 3a.2.18. Completion of the Water Quality Management Strategy

Description: Work will build upon tasks outlined in Subtask 3a.2.11. Tasks include proofreading and final editing, incorporation of peer review comments into document, and preparation for final printing. Final copy of strategy will be transferred to CD-ROM and posted on SRWP website.

Work product: Final printed and electronic versions of the OP Pesticide Water Quality Management Strategy for Diazinon by 12/31/01.

Responsibility: Mike Oliver, Parry Klassen

Work on this task has been completed.

Budget: No Phase VIII/IX/X funding will be included for this task.

Subtask 3a.2.19. OP Pesticide Focus Group Phase VII Coordination.

Description: Participate in focus group to implement a strategy to protect the main stem Sacramento and Feather Rivers from adverse effects of diazinon applied to dormant orchards and other agricultural lands. Collaborate with the SRWP Toxics Subcommittee and groups not represented in the SRWP.

Work product: Hold bi-monthly meetings, coordinate meeting agendas, meeting notes,

liaison to Toxics Subcommittee. The time period for this Phase VII task is from March 2002 to February 2003.

Responsibility: To be determined; input will be received from the District and the Toxics Subcommittee. District will contract with a facilitator and recorder acceptable to the focus group.

Work on this task has been completed.

Budget: No Phase VIII/IX/X funding is included for this task.

Subtask 3a.2.20. Tributary Monitoring

Description: The principal objective of this proposed project is to perform sampling and analysis for up to 5 wet season episodic events in tributaries of the Sacramento and Feather Rivers during the 2001-02 dormant spray season. This effort will support the management strategy implementation efforts of the Sacramento River Watershed Program OP Pesticide Focus Group. The planning and design of this monitoring effort will be coordinated with the Monitoring Subcommittee of the SRWP.

Prior to sampling, a Quality Assurance Project Plan (QAPP) and sampling plan will be prepared and submitted to the Sacramento Regional County Sanitation District and the EPA. Sampling and analytical methodologies will be described in the QAPP. The QAPP developed will be adapted from the Sacramento River Watershed QAPP.

Products associated with the monitoring for the project include preparation of OP pesticide monitoring plans, schedule sampling events, conducting the monitoring, preparation of status reports, analysis of water quality samples performed by an analytical laboratory acceptable to the OP Pesticide Focus Group and a report summarizing the monitoring data. The time period for this task is from November 2003 through March 2005.

Activities: Sampling and analyses of agricultural runoff.

Outputs: As the project will be coordinated through the Ag Issues Work Group , monitoring status reports will be given regularly to the group; and a presentation summarizing data will be given to the group.

Responsibility: U. C. Davis Aquatic Toxicology Laboratory. .

Budget: Phase VII funding was \$47,500. No Phase VIII/IX/X funding is included for this task as the result of recommendations by the Monitoring/Toxics Subcommittee in January 2003.

Subtask 3a.2.21 Peer Review of Monitoring/Modeling Research Reports

Description: Funding for this project will involve reimbursing peer reviewers for their review and comment on OPFG generated reports. The budget for this subtask is estimated based on the use of three peer reviewers for two reports: Baseline Monitoring in the Feather River Main Canal and Diazinon Exposure Model for the Sacramento and Feather Rivers.

Outputs: Peer review comments of OPFG reports.

Responsibility: Peer review panel.

Budget: No Phase VIII/IX/X funding is allocated to this task.

Subtask 3a.2.22 Identify and Quantify Sources of Diazinon

Description: Identify and quantify important regional sources of diazinon, and chlorpyrifos, to the Sacramento and Feather Rivers using existing data. Based on monitoring information from these rivers, evaluate factors that are important in determining the concentrations in the rivers. Using appropriate models, determine how concentrations vary in the Sacramento and Feather Rivers depending on load and flow scenarios. To the extent possible, describe and evaluate effects management practices may have on load contributions to the Sacramento and Feather River watersheds. Compare concentrations and loads to targets and determine reductions necessary for target compliance. In accordance with USEPA policy for peer review of federally funded projects, the draft report will be provided to experts selected by the USEPA and the District for comment and review.

Outputs: Draft report from Waterborne Environmental to SRWP (6/02). Final report from Waterborne Environmental with response to comments and peer review (12/31/04).

Responsibility: Waterborne Environmental; input will be received from the District and other focus group members.

Budget: No Phase VIII/IX/X funding is allocated to this task.

Subtask 3a.2.23. Persistence of Pyrethroid Pesticides.

Description: Study goal is to provide data on the persistence of pyrethroid pesticides in farm soils after application in the Sacramento River Watershed. Conducted in coordination with PRISM grant work and related funding by USGS, analyze soil from one farm for a suite of pesticides during the

summer and fall of 2004.

After getting approval of a QAPP, collect soils from one farm before, and up to four times after, application of pyrethroids. Analyze the soils for 7 pyrethroids and 21 organochlorine pesticides and their degradation products. Prepare reports documenting methods, data and conclusions.

Work products: QAPP for this work modified from existing QAPP for work on the PRISM grant.

Quarterly Reports of activity.

Draft Technical Report – August 2005

Final Technical Report – October 2005

The time period for this Phase VII task is from September 2004 to October 2005.

Responsibility: U. C. Berkeley (UCB) (Dr. Donald Weston) and Southern Illinois University (SIU) (Dr. Michael Lydy). UCB will submit the QAPP, and be responsible for all field activities. SIU will conduct pesticide analyses and, with participation of UCB, prepare technical reports.

Budget: \$23,000 of unused funds from Phases IV to VII in Subtasks 3a.1.1, 3a.2.3 and Subtask 3a.2.21.

Subtask 3a.2.24. Pesticide/Ag Issues Focus Group Phase VIII/IX Coordination.

Description: Participate in focus group to implement a strategy to protect the main stem Sacramento and Feather Rivers from adverse effects of diazinon applied to dormant orchards and other agricultural lands. Collaborate with other groups, including the SRWP Toxics Subcommittee.

Activities: Hold meetings.

Outputs: Meeting agendas, meeting notes, liaison to Toxics Subcommittee. The time period for this Phase VIII/IX task is from March 2003 to May 2005.

Responsibility: To be determined; input will be received from the District and the Toxics Subcommittee. District will contract with a facilitator and recorder acceptable to the focus group.

Budget: Phase VIII/IX funding is \$63,505: RWQCB \$25,000; Facilitator \$9,405,

Notetaker \$4,500, and \$24,600 to be determined through recommendations from the Focus Group and approval by the Grants Subcommittee.. No Phase X funding is allocated to this task.

Subtask 3a.2.25. Augment Agricultural Issues White Paper

Description: Perform follow-up analysis and text preparation to add to the existing Agricultural Issues white paper.

Outputs:: Draft and final white paper.

Responsibility:Fred Thomas

Budget: Phase X budget allocation to this task is \$7,500.

Subtask 3a.2.26 Perform Tasks Identified in White Paper

Description: Perform tasks to support one or more implementation recommendations described in the Agricultural Issues white paper.

Outputs: To be determined

Responsibility:To be determined by Grants Subcommittee.

Budget: Phase X budget allocation to this task is \$57,500.

Subtask 3a.2.27 Perform Work to Complete Analytical Modeling Effort

Description: Identify and quantify major sources of pesticide loadings that contribute to runoff or drift mechanisms in the waterways. Quantify loadings in terms of spatial and temporal probability of occurrence. Describe the locations in which monitoring and mitigation efforts should be conducted. Evaluate anticipated trends in pesticide uses, i.e. increases or reductions. The work is an expansion of the land-based component of the original modeling effort.

Outputs: Draft and final report

Responsibility:Waterborne Environmental, Inc.

Budget: Phase X budget allocation to this task is \$23,000.

Subtask 3a.3 Drinking Water Parameters of Concern

Description: Work on this task shall include participation

in Basin Planning activities sponsored by the Regional Board, the California Urban Water Agencies and CALFED. Tasks shall include attending meetings of a working group that will be formed by the Central Valley Regional Board through funding provided outside the SRTPCP. Work shall include participation in meetings of the work group, liaison of work group information to the Toxics Subcommittee, including distribution of copies of meeting minutes to the Toxics Subcommittee and review/comment on products of the work group. Work on this task to be completed by June 2005.

Outputs: Meeting agendas, meeting notes, and liaison reports.

Responsibility: LWA shall attend meetings of the working group and provide meeting documentation to the Toxics Subcommittee.

Budget: No Phase VIII/IX/X funding is allocated to this task. .

Subtask 3b. Demonstration/Early Implementation Project.

Description: Work in this subtask is to be used to fund projects identified to implement management strategies in the Sacramento River watershed. This money may be used in parallel with other funding sources (e.g. CALFED, EQIP, etc.) to leverage the benefits to water quality protection and beneficial use attainment. OP Pesticide outreach tasks have been selected initially for this funding. The development and conduct of a series of grower outreach presentations to traditional groups during the Fall and Winter of 2000/2001 is one part of this work. The non-traditional outreach work described for Fred Thomas of CERUS Consulting in Subtasks 3a.2.14 and 3a.2.16 is also part of this work.

Work Products: Projects to improve beneficial use attainment and to create water quality improvement, consistent with water quality management strategies developed under Task 3a. OP pesticide outreach programs are being developed and implemented in Phases IV and V. The outreach presentations to traditional grower groups were developed in Summer and Fall 2000 and will end in (04/01). The outreach to non-traditional grower groups will take place between 1/01 and 12/01.

Responsibility: To be determined by the District, with input and guidance by the Toxics Subcommittee and the SRTPCP Grants

Subcommittee. Contracts awarded to Parry Klassen of the Coalition for Urban and Rural Environmental Stewardship (CURES) and Fred Thomas of CERUS Consulting.

Work on this task has been completed.

Budget: No Phase VIII/IX/X funding is allocated to this task.

Task 3c.1 Coordination with CALFED Toxicity Studies and Providing Technical Outreach

Description: Provide liaison and coordination between CALFED studies to examine causative agents for observed toxicity in the Sacramento River watershed and the monitoring and management activities of the SRWP subcommittees. Provide reports on CALFED study activities and results at monthly meetings of the Toxics and Monitoring Subcommittees. Additionally, provide technical outreach information to the Public Outreach and Education Subcommittee and other SRWP stakeholders.

Work Products: Provide liaison information regarding CALFED studies to Toxics and Monitoring subcommittees. Provide technical outreach information to stakeholders. Submit copies of all written liaison and outreach information to the District.

Responsibility: Regional Board staff.

Work on this task has been completed.

Budget: No Phase VIII/IX/X funding is allocated to this task.

Task 3c.2 Coordinate Activities of SRWP Toxicity Focus Group

Description: Coordinate activities of SRWP Toxicity Focus Group to develop a strategy to address toxicity of unknown cause. Collaborate with other stakeholder groups, including the SRWP Toxics and Monitoring Subcommittees and others. Participate in development of CALFED proposal to implement the strategy.

Activities: Hold meetings, coordinate strategy development.

Outputs: Meeting agendas, meeting notes, liaison to Toxics Subcommittee.

Responsibility: Regional Board

Budget: Phase VIII/IX/X funding of \$20,000 is allocated to the Regional

Board to cover work from November 2002 through October 2005. Phase X funding allocation for this task is \$5,000.

Task 4. Sacramento River Watershed Program

Subtask 4a. Coordinate Stakeholder Activities.

Subtask 4a.1. Coordination of General stakeholder meetings.

- Description:** Assist in general stakeholder meeting organization and administration, including arrangements for rooms, food and appurtenances. Note that direct costs for food and supplies (e.g. awards) are not included in the budget for this task.
- Activities:** Five General stakeholder meetings. The time period covered by Phase IV/V funding is from March 1999 through February 2001. Phase VI funding extends the schedule from February 2001 to February 2002 and includes one general stakeholder meeting. Phase VII funding extends the schedule from March 2002 to February 2003 and includes one general stakeholder meeting. Phase VIII/IX/X funding extends the schedule from March 2003 to February 2006 and includes three General stakeholder meetings.
- Summaries of all or portions of these meetings appear as printed outputs in the work of Task 4a.5, Task 4b.1, and Task 4b.6.
- Responsibility:** Harris and Company worked on this task from March 1999 through April 2005. Mary Lee Knecht was assigned the remainder of this work in September 2005.
- Budget:** Phase VIII/IX/X allocation is \$20,000. Phase X funding allocation to this task is \$4,000.

Subtask 4a.2. Public Inquiry Responses

Description: Provide point of contact for public inquiries regarding the SRTPCP and SRWP. Receive and respond to telephone, FAX, email and written requests for information from SRWP stakeholders and other interested parties.

Activities: Communications with stakeholders and other interested parties; distribution of program documents; referrals to SRTPCP task leaders. The time period covered by the Phase IV/V portion of this task was from March 1999 through February 2000. The time period for the Phase VIII/IX/X portion of this task is from January 2003 through December 2005.

Information from these communications appear as printed output periodically in work from Task 4a.5, Task 4b.1 and Task 4b.6.

Responsibility: Harris and Company completed work in Phases VIII and IX. Mary Lee Knecht is responsible for Phase X work.

Budget: Phase VIII/IX/X funding total is \$12,000. Phase X funding allocation to this task is \$4,000.

Subtask 4a.3. Mailings

Description: Copying, assembling, mailing and e-mailing information to subcommittee members and general stakeholders.

Work Products: Mailings to listed participants in the SRWP. The time period for this task under Phase IV/V/VI is from March 1999 to February 2002. Phase VII funding extends the schedule from March 2002 to February 2003. Phase VIII funding extends the schedule from March 2003 to February 2004.

Responsibility: Central Valley Regional Board.

Work on this task has been completed.

Budget: Phase VIII funding allocation is \$10,000. No Phase IX/X funding is allocated to this task.

Subtask 4a.4 Program Coordinator

Description: Duties of the Program coordinator position would include (1) communicating and reporting, (2) responding to questions and requests for information regarding the SRTPCP and the SRWP, (3) coordinating and communicating with watershed groups within the Sacramento River basin, (4) coordinating and communicating with agencies and organizations (e.g. CALFED, CVPIA, etc.), (5) coordinating with Resource Centers and liaisons, (6) attend SRTPCP and SRWP meetings, and (7) seek funding sources. The Coordinator will work in partnership with the SRWP in executing many of the tasks defined above.

Outputs: Monthly reports of major activities. The time period for the Program Coordinator task will be four years (March 2000 through February 2004), with Phase VII funding the schedule

from March 2003 to February 2004 and Phase IX funding the period from March 2004 through December 2005.

Responsibility: Contractor selected by the District. In Phases IV and V the contractor selected was Dennis Bowker. In Phases VI and VII, the contractor selected was Kathy Russick.

Budget: No Phase VIII funding is allocated to this task. Phase IX funding for this task is \$20,000. No Phase X funding is allocated to this task.

Subtask 4a.4.2 Education Coordinator

Description: The Education Coordinator will provide assistance to the Program Coordinator on various work elements listed in Subtask 4a.4.1. The Education Coordinator will provide emphasis and focus on education and outreach aspects of the SRWP, including serving as the primary contact with the Public Outreach and Education Subcommittee and providing coordination of K-12 educational activities funded under the SRTPCP. Education Coordinator shall also provide written information for inclusion in the newsletter, *Waterways* and shall assist in editing draft versions of the newsletter.

Outputs: Monthly reports of major activities. Articles and written information appearing in *Waterways* (Task 4b.1) and on the SRWP website (Task 4a.5). The time period covered by the task will be from March 2000 to March 2004. Phase VII funds the schedule from March 2003 to June 2005.

Responsibility: Contractor selected by the District. In Phases IV, V, VI, and VII the District selected Allen Harthorn.

Budget: No Phase VIII or X funding is allocated to this task. Phase IX funding for this task is \$25,000.

Subtask 4a.5. Regional Resource Network

Description: Establish a regional resource network to assist local watershed groups within the Sacramento River watershed. Functions of the Resource network shall include:
(a) Development and maintenance of a website linked to the SRWP home page. Website shall include calendar of meetings and events within the sphere of influence of the Resource network, minutes of local watershed meetings, newsletters of local organizations, linkages to related web sites (e.g. watershed groups

and organizations, state and local agencies, etc.). This activity shall be coordinated with the Public Outreach and Education Subcommittee, which is charged with maintenance of the SRWP homepage.

(b) Develop and maintain an electronic resource library for the SRWP, including references and abstracts of publications, articles, reports, conference proceedings, etc. Library shall be linked to appropriate information repositories maintained by others, including CERES, ICE, CALFED, IEP, SFEI, state and federal agencies, colleges and universities, etc. Provide assistance to users, including but not limited to obtaining scientific information and references, water quality data, maps and electronic GIS files, federal and state documents, and contacts with other watershed programs.

(c) Develop and maintain an electronic funding source catalog for use by local groups and entities, describing state and federal documents, funding sources, programs, objectives, application requirements, available funds, application deadlines, points of contact, etc. Provide assistance to users in obtaining funding for local projects.

(d) Provide organizational assistance to local watershed groups, including training and assistance with startup and administration, networking, internet access, planning, GIS applications, monitoring, restoration activities, cost estimating, etc. Implement student intern programs to provide technical assistance with the above activities.

Outputs: Products shall include a website aimed at assistance to local programs and entities, an electronic resource library with links to available information sources of interest and benefit to local programs, an electronic funding source catalog, and a training program providing training sessions and technical assistance to local programs. Quarterly status reports documenting activities of the resource center shall be submitted to the Public Outreach and Education Subcommittee (POES) of the SRWP. The time period covered by this task is from March 1999 through February 2006). One year of funding for the Resource Center was provided by Phase VI, extending the schedule from February 2001 to February 2002. Phase VII funding for one year is allocated to this task, extending the schedule from February 2002 to February 2003. Phase X funding is for the period February 2005 to February 2006.

The work to be performed in Phase X is the implementation of the Sacramento Watershed Information Model for a portion of the watershed.

Responsibility: Contractor selected by the District and the Regional Board, with input from POES. The contractor for Phase IV was CSU Chico. A new contractor was selected to implement the remaining tasks in Phase IV/V/VI/VII.

Budget: A total of \$67,000 in Phase VIII/IX/X funding is allocated to this task. Phase VIII funding of \$5000 is allocated to the Regional Board to administer the regional resource network contract. Phase IX funding of \$2,000 is allocated to the Regional Board. The Phase X funding allocation to this task is \$60,000.

Subtask 4b. Conduct Public Outreach and Education Program

Subtask 4b.1. Newsletter

Description: Prepare newsletters in coordination with the Public Outreach and Education Subcommittee and other SRWP subcommittees and members, as appropriate.

Outputs: Thirteen newsletters. The time period covered by this Phase IV/V/VI task is from March 1999 through February 2002. Phase VII extends the schedule for this task from March 2002 to February 2003 and covers one newsletter. Phase VIII extends the schedule for this task from March 2003 to February 2004 and covers two newsletters. Phase IX extends the schedule for this task from March 2004 to February 2005 and covers two newsletters.

Responsibility: Harris and Company

Budget: Phase VIII/IX funding allocated to this task is \$40,000. No Phase X funding is allocated to this task.

Subtask 4b.2. Education Workshops

Description: Assist in the planning and administration of three education workshops in coordination with the POES and other SRWP subcommittees and stakeholders.

Activities: Three education workshops (total of three workshop days for Phase IV/V/VI). The time period covered by this Phase IV/V/VI task is from March 1999 through February 2002. A two-day workshop was funded under the Phase IV/V allocation. Phase

VI funding extends the schedule from March 2001 to February 2002, and covers one one-day education workshop. This day may be combined with the General Stakeholder meeting to create a single two/day dual purpose meeting in lieu of two separate one-day events. No work on this task is anticipated under Phase VII or Phase VIII/IX. See Subtask 4a.1. Phase X work on this task will be completed by December 2006.

Written summaries of all or portions of these workshops appear in printed form in printed work from Task 4a.5, Task 4b.1, and Task 4b.6.

Responsibility: Harris and Company was responsible for this work in Phases VIII and IX. Mary Lee Knecht is responsible for Phase X work.

Budget: No Phase VIII/IX funding is allocated for this task. The Phase X funding allocation to this task is \$20,000.

Subtask 4b.3. Public Outreach and Education Subcommittee (POES)
Facilitator/Coordinator

Description: Provide facilitation services and administrative support to assist in the bi-monthly meetings of the POES.

Activities: Facilitated meetings of the POES. The time period covered by this Phase IV/V/VI/VII and Phase VIII/IX task is from March 1999 through February 2003. Phase VIII/IX/X funds the schedule from March 2003 to February 2006.

The output of this task appears as meeting agendas from this task and meeting minutes produced in Task 4b.4.

Responsibility: To be determined by Public Outreach and Education Subcommittee(POES). In Phases IV through X the POES selected Karen Larsen of the Regional Board.

Budget: Phase VIII/IX/X funding allocation for this task is \$25,500. Phase X funding allocation to this task is \$7,500.

Subtask 4b.4. Public Outreach and Education Subcommittee (POES)
Recorder

Description: Provide recording services and prepare meeting minutes for the bi-monthly meetings of the POES.

Outputs: Meeting minutes for bi-monthly meetings of the POES. The time period covered by this Phase IV/V/VI/VII task is from March 1999 through February 2002. Phase VIII/IX extends the schedule to February 2006.

Responsibility: To be determined by POES.

Budget: Phase VIII/IX/X funding of \$7,300 is allocated to this task. The Phase X funding allocated to this task is \$2,500.

Subtask 4b.5. Education Program

Description: Develop and implement an education program to foster knowledge and involvement in stewardship activities in local watersheds. The program should emphasize utilization of existing training curricula and collaboration with existing programs and activities to maximize the benefit of the program within the Sacramento River watershed. Elements of the education program may include:

- (a) Sponsorship and administration of watershed education events in cooperation with other entities and organizations.
- (b) Training programs for teachers to assist them in the incorporation of watershed education in their curricula. Programs should include hands-on field training, with emphasis on water quality assessment and understanding. Training should be performed in partnership with existing programs to augment and improve such activities.
- (c) Training of high school and/or college students as watershed stewardship mentors and the implementation of a broader educational program in which these mentors serve as instructors/leaders for other students. The broad program may include focused projects, stewardship activities, and/or educational seminars. Collaboration with ongoing activities of this type would be encouraged.

Activities: Products may include organized community events, training programs for teachers, and/or educational programs for students. The time period for Phase IV/V/VI/VII/VIII activities on this task is March 2000 to December 2004.

Outputs from this task include final reports in some cases, printed teacher training materials, and written summaries of work appearing in printed products from Task 4a.5 and Task 4b.1.

Responsibility: To be determined by District with the input of POES.

Budget: Phase VIII funding of \$10,000 is allocated to this task. No Phase IX /X funding is allocated to this task.

Subtask 4b.6. Implementation of Strategic Communication Plan

Description: Conduct a public outreach/communication program for the purpose of increasing and maintaining stakeholder involvement. The program will be conducted in accordance with the recommendations of the strategic outreach plan developed during previous Phases.

Outputs: Public outreach materials and outreach meetings throughout the watershed. Written summaries of outreach meetings. The time period for Phase IV/V/VI/VII activities on this task is from March 1999 through February 2003. Phase VIII extends the schedule from March 2003 to February 2004. Phase X extends the schedule from March 2004 through February 2006.

Phase X work to be performed includes airing public service announcements (PSAs) in the northern watershed and production of a northern watershed specific PSA.

Responsibility: The public education consultant(s), based on input and guidance from the Public Outreach and Education Subcommittee (POES), will be responsible for the development of public outreach materials and the conduct of outreach meetings. Consultant(s) shall be selected by POES. MMC Communications was selected for Phases IV through X..

Budget: The total Phase VIII/IX/X funding allocation to this task is \$75,000. Phase VIII funding allocation to this task is \$40,000. No Phase IX funding is allocated to this task. Phase X funding allocation to his task is \$35,000.

Subtask 4b.7. Monitoring Compendium Web Site Maintenance

Description: Provide technical services to maintain a web site which is linked to the SRWP home page. The site shall

provide direct access to the information contained in the 1998 DWR Compendium of Water Quality Monitoring Programs in the Sacramento River Basin and Sacramento-San Joaquin Delta. Information in the compendium describes ongoing water quality monitoring activities in the Sacramento River basin, including parameters monitored, sites, frequency, objectives, data availability, and points of contact. This information will be updated on a regular basis, with major program information updated annually and minor programs updated triennially.

Work Products: An interactive web site which is updated and maintained to provide publicly available information regarding current water quality monitoring programs and activities in the Sacramento River watershed. The time period for this task is from March 1999 through February 2000.

Responsibility: District. Funding supplements resources provided by Department of Water Resources, Municipal Water Quality Investigations.

Work on this task is complete.

Budget: No Phase VIII/IX/X funding is allocated to this task.

PHASE IV/V/VI/VII AND PHASE VIII/IX/X SCHEDULE

A proposed schedule for Phase IV/V/VI/VII and Phase VIII/IX/X listing anticipated months of starting and completing the project tasks is shown in Table 1. The schedule was based on initiation of the Phase IV/V/VI/VII project in March 1999.

Table 1. Proposed Schedule for Phase IV/V/VI/VII and Phase VIII/IX/X Tasks

Tasks	Start	Finish
1 SRTPCP Coordination		
Coordinate Stakeholder Activities	March 1999	December 2006
Facilitate Stakeholder Meetings	March 1999	December 2005
Examine Institutional Options	March 1999	February 2002
Prepare Task Progress Reports	March 1999	December 2006
2 Water Quality Monitoring and Related Studies		
Manage/Develop Monitoring Program	June 1999	September 2005
Conduct Field Sampling	June 1999	May 2004
Perform Laboratory Analyses	June 1999	September 2004
Analyze Monitoring Program Results	June 1999	June 2005
Analyze System-wide Impacts on Delta	March 1999	February 2003
Prepare Monitoring Compendium	March 2004	February 2005
Conduct Monitoring Workshops	March 2004	February 2005
Unknown Toxicity Studies	March 2005	December 2006
Prepare Task Progress Reports	March 1999	December 2006
3 Water Quality Management		
Formulate Water Quality Management Strategies	March 1999	December 2006
Demonstration/Early Implementation Projects	March 1999	December 2002
CALFED Liaison / Technical Outreach	March 1999	October 2005
4 Sacramento River Watershed Program		
Coordinate Stakeholder Activities	March 1999	February 2006
Public Outreach and Education Program	March 1999	December 2006

PHASE VIII/IX/X BUDGET

A proposed budget for each Phase VIII/IX/X task is shown in Table 2, Table 3 and form SF 424.

Table 2. Proposed Budget for Phase VIII/IX/X Tasks

Tasks	Budgeted Amount
1 SRTPCP Coordination	
Coordinate SRTPCP Activities	\$125,963
Facilitate Monitoring Subcommittee Meetings	\$26,500
Institutional Options	\$0
Prepare Task Progress Reports	\$4,500
Subtotal Task 1	\$156,963
2 Water Quality Monitoring and Related Studies	
Manage/Develop Monitoring Program	\$34,500
Conduct Field Sampling	(included in 2c)
Perform Laboratory Analyses	\$189,216
Analyze Monitoring Program Results	\$71,500
Analyze System-wide Impacts on the Delta	\$0
Prepare Monitoring Compendium	\$19,411
Conduct Monitoring Workshop	\$18,000
Unknown Toxicity Studies	\$96,000
Prepare Task Progress Reports	\$3,000
Subtotal Task 2	\$431,627
3 Water Quality Management	
Formulate Water Quality Management Strategies	\$ 391,505
Demonstration/Early Implementation Projects	\$0
CALFED liaison/technical outreach and Coordinate Toxicity Focus Group	\$20,000
Subtotal Task 3	\$411,505
4 Sacramento River Watershed Program	
Coordinate Stakeholder Activities	\$ 154,000
Public Outreach and Education Program	\$177,800
Subtotal Task 4	\$ 331,800
Total Phase VIII/IX/X Budget	\$1,331,895

Table 3. PHASE VIII/IX/X BUDGET FOR THE SACRAMENTO RIVER WATERSHED PROGRAM

Coordination of Stakeholder Activities

<i>General Stakeholder Meetings incl. Rooms (Harris)</i>	\$ 20,000
<i>Public Inquiry Responses (Harris)</i>	12,000
<i>Program Coordinator and Education Coordinator</i>	45,000
<i>Regional Resource Network</i>	67,000
<i>Mailings (CVRWQCB)</i>	<u>10,000</u>
 Subtotal	 \$154,000

Public Education and Outreach

<i>Newsletter (Harris)</i>	\$ 40,000
<i>Education Workshops, incl. Rooms (Harris)</i>	\$20,000
<i>POES Subcommittee Facilitator (CVRWQCB)</i>	25,500
<i>POES Subcommittee Minutes</i>	7,300
<i>Education Program</i>	10,000
<i>Implementation of Strategic Communication Plan</i>	75,000
<i>Monitoring Compendium Web Site Maintenance</i>	<u>0</u>
 Subtotal	 \$177,800

TOTAL PHASE VIII/IX/X SRWP COST **\$331,800**

INTEGRATED WORK PLAN

The SRTPCP is a multi-phased program that is planned to progress in logical steps. This section describes the vision for the SRTPCP, the phased approach to accomplishing this vision, and the relationship between Phase VIII/IX/X and earlier phases of the program.

The SRTPCP Vision

The goal envisioned for the SRTPCP is the development and implementation of a locally-supported, collaborative program that will bring the Sacramento River and its tributaries into compliance with appropriate water quality standards and thereby protect beneficial uses.

The Phased Approach

The achievement of the SRTPCP vision will require many years of effort. Because of funding considerations, the program has been divided into phases, with a new phase beginning each year. The number of years, or phases, required to achieve stated goals and objectives is dependent on the funding available each year.

The largest percentage of the cost of the program is for gathering the water quality monitoring data and other data necessary to make technically sound decisions as to how best to achieve standards and protect beneficial uses.

The general relationship between SRTPCP Phase VIII/IX/X and both past and future program phases is presented graphically in Figure 1. The figure shows the four basic elements of the SRTPCP (water quality monitoring, site-specific objectives development, control options evaluation, and control program development) together with supporting elements (program organization and stakeholder activities) and program implementation elements (program implementation and program review).

Phase I of the SRTPCP focused on getting organized -- setting up the stakeholder organization and the broader Sacramento River Watershed Program, compiling existing information, conducting initial toxicity monitoring, and designing a water quality monitoring program. Phase II elements included maintaining and increasing stakeholder involvement, conducting the water quality monitoring program for a one-year period, identifying priority water quality issues, and formulating a strategic framework to address those issues. Phase III elements include maintaining stakeholder involvement, conducting the water quality monitoring program for a second year, and identifying candidate parameters for strategic plan development, and identifying procedures for the development of site-specific water quality objectives. Phases IV, V, VI, and VII include expanding stakeholder involvement, funding watershed coordinator and education coordinator positions, developing a regional resource network, funding educational programs, conducting Year 2, 3, 4 and 5 of the monitoring program, developing water quality management strategies for selected parameters of concern, and implementation of identified early implementation/demonstration projects. Phase VIII/IX/X funding has maintained a

minimum level of activity in each of these key program areas and includes a small amount of funding for Year 6 water quality monitoring.

Figure 1. Integrated Phases of the Sacramento River Toxic Pollutant Control Program

Program Element										
	I	II	III	IV	V	VI	VII	VIII	IX	X
Program Organization	X	X								
Stakeholder Activities	X	X	X	X	X	X	X	X	X	X
Water Quality Monitoring	X [DESIGN]	X	X	X	X	X	X	X	X [DESIGN]	
Site Specific Objectives			X	X	X	X				
Control Options				X	X	X	X			
Control Program						X	X	X		
Program Implementation				X	X	X	X	X	X	X
Program Review									X	X

Starting in Phase VI, program phases shifted into an implementation mode. In addition to stakeholder activities, activities at that stage will include overseeing program implementation, monitoring to determine the effects of implementation, and periodically updating the program to reflect new information and/or concerns. It should be noted that this mode relies on external funding of implementation measures identified in the strategic plans developed under the SRTPCP.

Also in Phase VI, work was initiated on the fourth element of the SRTPCP, development of a locally-supported control program. This effort culminated in the development of the Sacramento River Watershed Program (SRWP), now a non-profit stakeholder-led organization developed to take over a number of the work elements started under the SRTPCP. During all phases, SRTPCP activities are being coordinated with the activities of the broader Sacramento River Watershed Program. The SRWP will continue to offer opportunities to address the numerous other issues of concern in the watershed, such as habitat, endangered species, flow, and ground water issues.

Relationship of Phase VIII/IX/X with Earlier Phases

Phase VIII/IX/X can be related to Phases I, II and III and Phases IV/V/VI/VII on the basis of budget, schedule and scope of work.

A comparison of the Phase VIII/IX/X budget with the Phase I, II and III and Phase IV/V/VI/VII budgets is presented in Table 4.

An integrated schedule of Phases I through VIII/IX/X is presented in Figure 2.

Table 4. Integrated Budgets for Phases I, II, III, IV, V, VI, VII and VIII/IX/X

Tasks	Phase I	Phase II	Phase III	Phase IV
1 SRTPCP Coordination				
Coordinate SRTPCP Activities	\$17,040	\$76,880	\$95,694	\$184,463
Facilitate Meetings		\$10,000	\$10,800	\$10,800
Evaluate Institutional Options				\$30,000
Prepare Task Progress Reports	\$3,000	\$3,000	\$3,000	\$3,000
	\$20,040	\$89,880	\$109,494	\$228,263
2 Water Quality Monitoring				
Design Monitoring Program	\$101,790			
Conduct Demonstration Program	\$90,000			
Toxicity Monitoring	\$100,000	(In Mon. Prog)	(In Mon. Prog)	(In Mon. Prog)
Develop Monitoring Plan		\$35,000		
Manage Monitoring Plan		\$72,000	\$72,000	\$77,600
Conduct Field Sampling		(incl. in 2c)	(incl. in 2c)	(incl. in 2c)
Perform Laboratory Analyses		\$454,000	\$500,000	\$405,000
Analyze Monitoring Program Results		\$69,000	\$69,000	\$57,200
Analyze System-Wide Impacts on Delta				\$40,000
Analyze Implementation Options		\$37,000		
Evaluate Regulatory Criteria			\$20,000	
Prepare Task Progress Reports	\$3,000	\$3,000	\$3,000	\$3,000
	\$294,790	\$670,000	\$664,000	\$582,800
3 Water Quality Management				
Compile Existing Information	\$104,000			
Identify Needs	\$24,000			
Prepare Program Report	\$24,000			
Identify Impaired Waters		\$29,000		
Identify Priority Water Quality Issues		\$28,000		
Formulate Water Quality Management Strategies		\$40,000		
a. Formulate Strategies for Mercury				\$353,000
b. Formulate Strategies for OP Pesticides				\$265,000
c. Formulate Strategies for SDWA Issues				\$20,000
Demonstration/Early Implementation Project				\$64,200
CALFED liaison/ technical outreach				\$20,000
Prepare Task Progress Reports	\$3,000	\$3,000		
Subtotal Task 3	\$155,000	\$100,000		\$722,200
4 Sacramento River Watershed Program				
Coordinate Stakeholder Activities	\$45,960	\$142,752	\$123,874	\$384,200
Public Outreach and Education Program		\$50,000	\$50,000	\$185,800
Subtotal Task 4	\$45,960	\$192,752	\$173,874	\$570,000

Table 4. Integrated Budgets for Phases I, II, III, IV, V, VI, VII and VIII/IX/X (Continued)

Tasks	Phase V	Phase VI	Phase VII	Phase VIII	Phase IX	Phase X
1 SRTPCP Coordination						
Coordinate SRTPCP Activities	\$184,574	\$185,895	\$109,763	71,700	18,500	35,763
Facilitate Meetings	\$10,800	\$11,000	\$5,500	8,000	18,500	
Evaluate Institutional Options	\$20,300	\$10,000				
Prepare Task Progress Reports	\$3,000	\$3,000	\$1,500	1,500	1,500	1,500
	\$218,674	\$209,895	\$116,763	\$81,200	38,500	37,263
2 Water Quality Monitoring						
Design Monitoring Program						
Conduct Demonstration Program						
Toxicity Monitoring						
Develop Monitoring Plan (workshops)					\$18,000	
Manage/Develop Monitoring Plan	\$72,600	\$65,000	\$20,000	\$20,000	\$16,000	
Conduct Field Sampling						
Perform Laboratory Analyses	\$425,000	\$400,000	\$286,600	\$189,216		
Analyze Monitoring Program Results	\$57,200	\$60,000	\$60,000	\$27,000	44,500	
Analyze System-Wide Impacts on Delta	\$5,000					
Analyze Implementation Options						
Evaluate Regulatory Criteria						
Monitoring Compendium					19,411	
Unknown Toxicity Studies						96,000
Prepare Task Progress Reports	\$3,000	\$3,000	\$1,500	1,500		
	\$562,800	\$528,000	\$368,100	\$237,500*	97,911	96,000
3 Water Quality Management						
Compile Existing Information						
Identify Needs						
Prepare Program Report						
Identify Impaired Waters						
Identify Priority Water Quality Issues						
Formulate Water Quality Management Strategies						
a. Formulate Strategies for Mercury	\$370,151	\$233,000	\$128,000	45,000	31,000	161,500
b. Formulate Strategies for OP Pesticides	\$247,849	\$182,000	\$117,400	45,000	18,505	90,500
c. Formulate Strategies for SDWA Issues	\$20,000					

Demonstration/Early Implementation Project						
CALFED liaison/ technical outreach	\$20,000		\$20,000	10,000	5,000	5,000
Prepare Task Progress Reports						
Subtotal Task 3	\$658,000	\$415,000	\$265,400	\$100,000*	54,505	257,000
4 Sacramento River Watershed Program						
Coordinate Stakeholder Activities	\$255,600	\$235,800	\$142,000	\$27,000	59,000	68,000
Public Outreach and Education Program	\$94,400	\$113,200	\$53,000	\$80,400	32,400	65,000
Subtotal Task 4	\$350,000	\$349,000	\$195,000	\$107,400	91,400	133,000

* \$216,216 was allocated to Task 2 in January 2003.

Figure 2. Integrated Schedule for SRTPCP Phases I, II III, IV-V-VI-VII, and VIII-IX-X

